L Number	Hits	Search Text	DB	Time stamp
-	10	65/432.ccls. and (electron adj beam)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/04 07:03
-	5	65/430.ccls. and (electron adj beam)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/30 15:31
-	253	((electron adj beam) and (cure or curable)) and (65/425.ccls. or 65/430.ccls. or 65/447.ccls. or 427/458.ccls. or 427/487.ccls. or 427/495.ccls. or 427/501.ccls. or 427/532.ccls. or 427/551.ccls. or 427/566.ccls. or 427/596.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 08:29
-	14	65/425.ccls. and (electron adj beam)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/30 13:30
-	2	65/447.ccls. and (electron adj beam)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/30 13:58
-	42	((65/60.1-60.8).ccls.) and (electron adj beam)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/30 15:18
-	22	((65/60.1-60.8).ccls.) and (electron adj beam) and cur$4	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/30 15:19
-	72379	(electron adj beam) and cur$4	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/30 15:23
-	10	((electron adj beam) and cur$4) and 65/425.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/30 15:25
-	4	65/430.ccls. and ((electron adj beam) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/30 15:27
-	22	((65/60.1-60.8).ccls.) and ((electron adj beam) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/30 15:29
-	13541	(electron adj beam) and (cure or curable)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/30 15:30
-	2	((electron adj beam) and (cure or curable)) and 65/430.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/30 15:30
-	2	((electron adj beam) and (cure or curable)) and ((65/60.1-60.8).ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 13:51
-	25	427/458.ccls. and ((electron adj beam) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 08:46

-	84	427/487.ccls. and ((electron adj beam) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 07:38
-	25	427/495.ccls. and ((electron adj beam) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 07:44
-	70	427/501.ccls. and ((electron adj beam) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 08:00
-	40	427/532.ccls. and ((electron adj beam) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 08:03
-	160	427/551.ccls. and ((electron adj beam) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 08:19
-	100	427/566.ccls. and ((electron adj beam) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 08:26
-	161	427/596.ccls. and ((electron adj beam) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 08:32
-	3	65/432.ccls. and ((magnetic adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 08:36
-	2	65/430.ccls. and ((magnetic adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 08:36
-	175	((magnetic adj field) and (cur$4)) and (65/425.ccls. or 65/430.ccls. or 65/447.ccls. or 427/458.ccls. or 427/487.ccls. or 427/495.ccls. or 427/501.ccls. or 427/532.ccls. or 427/551.ccls. or 427/566.ccls. or 427/596.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 08:39
-	25	((magnetic adj field) and (cure or curable)) and (65/425.ccls. or 65/430.ccls. or 65/447.ccls. or 427/458.ccls. or 427/487.ccls. or 427/495.ccls. or 427/501.ccls. or 427/532.ccls. or 427/551.ccls. or 427/566.ccls. or 427/596.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 08:39
-	15	(magnetic adj field) and (65/60.1-60.8).ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 08:44
-	18	427/458.ccls. and ((magnetic adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:03
-	17	427/487.ccls. and ((magnetic adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:15
-	5	65/432.ccls. and ((electric$4 adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:05
-	3	65/430.ccls. and ((electric$4 adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:06

-	33	(electric$4 adj field) and (65/60.1-60.8).ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:06
-	51	427/458.ccls. and ((electric$4 adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:12
-	22	427/487.ccls. and ((electric$4 adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:15
-	2	427/495.ccls. and ((magnetic adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:16
-	2	427/495.ccls. and ((electric$4 adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:16
-	2	427/501.ccls. and ((magnetic adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:17
-	0	427/501.ccls. and ((electric$4 adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:18
-	13	427/532.ccls. and ((magnetic adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:19
-	24	427/532.ccls. and ((electric$4 adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:21
-	23	427/551.ccls. and ((magnetic adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:31
-	29	427/551.ccls. and ((electric$4 adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:34
-	40	427/566.ccls. and ((magnetic adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:42
-	30	427/566.ccls. and ((electric$4 adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:45
-	18	65/425.ccls. and ((electric$4 adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:37
-	8	65/425.ccls. and ((magnetic adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:41
-	67	427/596.ccls. and ((magnetic adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:42

-	64	427/596.ccls. and ((electric$4 adj field) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 09:45
-	20	4388093.URPN.	USPAT	2004/08/02 09:55
-	2	("4208200" | "4351657").PN.	USPAT	2004/08/02 10:00
-	2	("5000772").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 11:46
-	6	5000772.URPN.	USPAT	2004/08/02 11:43
-	2	("6432489").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 11:46
-	0	6432489.URPN.	USPAT	2004/08/02 11:47
-	2	("4581407" | "5461691").PN.	USPAT	2004/08/02 11:47
-	0	65.ccls. and ((electron adj beam) and cur$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 13:51
-	202	(65/425.ccls.and((electronadjbeam)andcur$4)).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 13:50
-	6	((electron adj beam) and (cure or curable)) and ((65/425).ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 13:52
-	2	("4581407" | "5461691").PN.	USPAT	2004/08/02 13:54
-	10	4581407.URPN.	USPAT	2004/08/02 14:03
-	6	((electron adj beam) and (UV or ultraviolet) and (cure or curable) and 65/425.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 14:21
-	0	((electron adj beam) and (UV or ultraviolet) and (cure or curable) and 65/424.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 14:22
-	2	((electron adj beam) and (UV or ultraviolet) and (cure or curable) and 65/441.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 14:26
-	2	((electron adj beam) and (UV or ultraviolet) and (cure or curable) and 65/447.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 14:31
-	2	((electron adj beam) and (UV or ultraviolet) and (cure or curable) and 65/60.3.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 14:36
-	62	((electron adj beam) and (UV or ultraviolet) and (cure or curable) and 427/487.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/02 15:27
-	2	("5812725").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 14:04
-	2	5812725.URPN.	USPAT	2004/08/02 15:45
-	10	("4169167" | "4472019" | "4849462" | "4932750" | "4962992" | "5136679" | "5171634" | "5373578" | "5427862" | "5723191").PN.	USPAT	2004/08/02 15:48

-	1228	(electron adj beam) same (magnet$4 adj field) same (electric$4 adj field)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 06:52
-	250	((electron adj beam) same (magnet$4 adj field) same (electric$4 adj field)) and coating	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 07:21
-	848	((electron adj beam) same (magnet$4 adj field) same (electric$4 adj field)) and cur$4	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 07:22
-	64	((electron adj beam) same (magnet$4 adj field) same (electric$4 adj field)) and (cure or curable)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 07:34
-	113	((electron adj beam) same (magnet$4 adj field) same (electric$4 adj field)) and resin	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 07:34
-	66	((electron adj beam) and (magnetic adj field)) and (427/496.ccls. or 427/547.ccls. or 427/598.ccls. or 427/163.2.ccls. or 427/331.ccls. or 427/407.1.ccls. or 427/407.2.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 08:39
-	48	((electron adj beam) and (electric$4 adj field)) and (427/496.ccls. or 427/547.ccls. or 427/598.ccls. or 427/163.2.ccls. or 427/331.ccls. or 427/407.1.ccls. or 427/407.2.ccls.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 08:39
-	1	("2989633").PN.	USPAT; US-PGPUB; EPO; JPO	2004/08/03 14:31
-	8987	(electron same radiation) and magnetic and cur$4	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 14:09
-	1624	(electron same radiation) and magnetic and cur$4 and optical and fiber	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 14:10
-	521	(electron same radiation) and magnetic and (cure or curable) and optical and fiber	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 14:10
-	4	2989633.URPN.	USPAT	2004/08/03 14:25
-	12	(("1630826") or ("2293840") or ("2504362") or ("2640948") or ("2729748") or ("2737593") or ("2785313") or ("2793282") or ("2794847") or ("2887584")).PN.	USPAT; US-PGPUB; EPO; JPO	2004/08/03 16:06
-	1	("2640948").PN.	USPAT; US-PGPUB; EPO; JPO	2004/08/03 16:19
-	243	(electron adj beam) same (cur$4) same (optical adj fiber)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 16:44
-	24	(electron adj beam) same (cur$4) same (optical adj fiber) and (polyether adj urethane adj acrylate adj oligomer)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/03 16:54
-	6	(electron adj beam) same (cur$4) same (optical adj fiber) and ((polyether adj urethane adj acrylate adj oligomer) same (reactive adj diluent))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/04 07:04

-	22	(("4448657") or ("4932750") or ("4863576") or ("4169169") or ("4472019") or ("4849462") or ("4962992") or ("5136679") or ("5171634") or ("5373578") or ("5427862")).PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/04 09:03
-	38	(polyether adj urethane adj acrylate adj oligomer) and (optical adj fiber)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/04 09:04
-	31	(polyether adj urethane adj acrylate adj oligomer) and (optical adj fiber) and (reactive adj diluent)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/05 08:43

Access DB# 128764

SEARCH REQUEST FØRM

Scientific and Technical Information Center

Requester's Full Name: LISA HERRING Examiner # : 80453 Date: 8/2/04
Art Unit: 1731 Phone Number 30 272-1094 Serial Number: 10077975
Mail Box and Bldg/Room Location: Rem 7440 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Preparation of Optical Fiber

Inventors (please provide full names): Toshio Ohbo, Nobuo Kawada, Massaya Ueno

Earliest Priority Filing Date: 02/20/01

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

****

STAFF USE ONLY		Type of Search		Vendors and cost where applicable	
Searcher:	EJ	NA Sequence (#)		STN	$ 220.77
Searcher Phone #:		AA Sequence (#)		Dialog	
Searcher Location:		Structure (#)	✓ (1)	Questel/Orbit	PCT
Date Searcher Picked Up:		Bibliographic	✓ (and)	Dr.Link	
Date Completed:	8-5-04	Litigation		Lexis/Nexis	
Searcher Prep & Review Time:	5	Fulltext		Sequence Systems	
~~Clerical Prep Time:~~		Patent Family		WWW/Internet	
Online Time:	60	Other		Other (specify)	

PTO-1590 (8-01)

CLAIMS:

1. A method for preparing an optical fiber, comprising the steps of:

applying a liquid composition of an electron beam-curable resin to a bare optical fiber or a coated optical fiber having a primary or secondary coating on a bare optical fiber,

irradiating electron beams to the resin composition on the optical fiber for curing while the optical fiber passes a zone under substantially atmospheric pressure, and

providing a magnetic field in the zone for thereby improving the efficiency of electron irradiation.

2. The method of claim 1 wherein the magnetic field has a magnetic flux density of at least 0.1 T.

3. The method of claim 1 wherein the zone has an inert gas atmosphere.

4. The method of claim 3 wherein the inert gas is helium.

5. The method of claim 1 wherein the electron beams have been accelerated at a voltage of 60 to 160 kV.

6. The method of claim 1 wherein the liquid composition comprises a polyether urethane acrylate oligomer and a reactive diluent.

7. A method for preparing an optical fiber, comprising the steps of:

applying a liquid composition of an electron beam-curable resin to a bare optical fiber or a coated optical fiber having a primary or secondary coating on a bare optical fiber,

irradiating electron beams to the resin composition on the optical fiber for curing while the optical fiber passes a zone under substantially atmospheric pressure, and

providing an electric field and a magnetic field in the zone so that the electron beams pass across the electric field and the magnetic field to two-dimensionally converge on the optical fiber.

8. The method of claim 7 wherein the magnetic field has a direction parallel to the path of the optical fiber, and the electric field has a direction perpendicular to the path of the optical fiber.

9. The method of claim 7 wherein the zone has an inert gas atmosphere.

10. The method of claim 9 wherein the inert gas is helium.

11. The method of claim 7 wherein the electron beams have been accelerated at a voltage of 60 to 160 kV.

12. The method of claim 7 wherein the liquid composition comprises a polyether urethane acrylate oligomer and a reactive diluent.

```
=> file home
FILE 'HOME'

=> display history full l1-

     FILE 'HCA, WPIDS, JAPIO'
L1         48784 SEA FIBREOPTIC? OR FIBEROPTIC? OR OPTIC?(2A)(FIBER? OR
                 FIBRE? OR FILAMENT? OR STRAND? OR THREAD? OR RIBBON? OR
                 FILIFORM?)
L2         97775 SEA FIBREOPTIC? OR FIBEROPTIC? OR OPTIC?(2A)(FIBER? OR
                 FIBRE? OR FILAMENT? OR STRAND? OR THREAD? OR RIBBON? OR
                 FILIFORM?)
L3         67245 SEA FIBREOPTIC? OR FIBEROPTIC? OR OPTIC?(2A)(FIBER? OR
                 FIBRE? OR FILAMENT? OR STRAND? OR THREAD? OR RIBBON? OR
                 FILIFORM?)
     TOTAL FOR ALL FILES
L4        213804 SEA FIBREOPTIC? OR FIBEROPTIC? OR OPTIC?(2A)(FIBER? OR
                 FIBRE? OR FILAMENT? OR STRAND? OR THREAD? OR RIBBON? OR
                 FILIFORM?)
L5        292573 SEA (ELECTRON# OR E)(2A)(BEAM? OR RAY OR RAYS OR GUN# OR
                 HIT OR HITS OR HITTING# OR STRIKE# OR STRUCK? OR
                 STRIKING# OR IMPACT? OR IMPING? OR IMPART? OR TARGET? OR
                 COLLID? OR COLLIS? OR RADIA? OR IRRAD? OR HOWITZER? OR
                 SHOOT? OR SHOT? OR EMANAT? OR EMIT? OR EMISS? OR
                 BOMBARD? OR SOURC?)
L6        106311 SEA (ELECTRON# OR E)(2A)(BEAM? OR RAY OR RAYS OR GUN# OR
                 HIT OR HITS OR HITTING# OR STRIKE# OR STRUCK? OR
                 STRIKING# OR IMPACT? OR IMPING? OR IMPART? OR TARGET? OR
                 COLLID? OR COLLIS? OR RADIA? OR IRRAD? OR HOWITZER? OR
                 SHOOT? OR SHOT? OR EMANAT? OR EMIT? OR EMISS? OR
                 BOMBARD? OR SOURC?)
L7         55669 SEA (ELECTRON# OR E)(2A)(BEAM? OR RAY OR RAYS OR GUN# OR
                 HIT OR HITS OR HITTING# OR STRIKE# OR STRUCK? OR
                 STRIKING# OR IMPACT? OR IMPING? OR IMPART? OR TARGET? OR
                 COLLID? OR COLLIS? OR RADIA? OR IRRAD? OR HOWITZER? OR
                 SHOOT? OR SHOT? OR EMANAT? OR EMIT? OR EMISS? OR
                 BOMBARD? OR SOURC?)
     TOTAL FOR ALL FILES
L8        454553 SEA (ELECTRON# OR E)(2A)(BEAM? OR RAY OR RAYS OR GUN# OR
                 HIT OR HITS OR HITTING# OR STRIKE# OR STRUCK? OR
                 STRIKING# OR IMPACT? OR IMPING? OR IMPART? OR TARGET? OR
                 COLLID? OR COLLIS? OR RADIA? OR IRRAD? OR HOWITZER? OR
                 SHOOT? OR SHOT? OR EMANAT? OR EMIT? OR EMISS? OR
                 BOMBARD? OR SOURC?)
L9        223489 SEA (MAGNET? OR B)(2A)(FIELD? OR FLUX?)
L10       116016 SEA (MAGNET? OR B)(2A)(FIELD? OR FLUX?)
```

```
L11         86203 SEA (MAGNET? OR B)(2A)(FIELD? OR FLUX?)
     TOTAL FOR ALL FILES
L12        425708 SEA (MAGNET? OR B)(2A)(FIELD? OR FLUX?)
L13        236413 SEA (MAGNET? OR B OR ELECTROMAG?)(2A)(FIELD? OR FLUX?)
L14        125155 SEA (MAGNET? OR B OR ELECTROMAG?)(2A)(FIELD? OR FLUX?)
L15         88462 SEA (MAGNET? OR B OR ELECTROMAG?)(2A)(FIELD? OR FLUX?)
     TOTAL FOR ALL FILES
L16        450030 SEA (MAGNET? OR B OR ELECTROMAG?)(2A)(FIELD? OR FLUX?)
L17          1012 SEA (POLYETHER# OR ETHER#)(5A)(POLYURETHAN## OR URETHAN##
                  )(5A)(POLYACRYLIC# OR ACRYLIC# OR POLYACRYLATE# OR
                  ACRYLATE# OR POLYMETHACRYLIC# OR METHACRYLIC# OR
                  POLYMETHACRYLATE# OR METHACRYLATE#)
L18          1130 SEA (POLYETHER# OR ETHER#)(5A)(POLYURETHAN## OR URETHAN##
                  )(5A)(POLYACRYLIC# OR ACRYLIC# OR POLYACRYLATE# OR
                  ACRYLATE# OR POLYMETHACRYLIC# OR METHACRYLIC# OR
                  POLYMETHACRYLATE# OR METHACRYLATE#)
L19            84 SEA (POLYETHER# OR ETHER#)(5A)(POLYURETHAN## OR URETHAN##
                  )(5A)(POLYACRYLIC# OR ACRYLIC# OR POLYACRYLATE# OR
                  ACRYLATE# OR POLYMETHACRYLIC# OR METHACRYLIC# OR
                  POLYMETHACRYLATE# OR METHACRYLATE#)
     TOTAL FOR ALL FILES
L20          2226 SEA (POLYETHER# OR ETHER#)(5A)(POLYURETHAN## OR URETHAN##
                  )(5A)(POLYACRYLIC# OR ACRYLIC# OR POLYACRYLATE# OR
                  ACRYLATE# OR POLYMETHACRYLIC# OR METHACRYLIC# OR
                  POLYMETHACRYLATE# OR METHACRYLATE#)
L21            12 SEA L1 AND L5 AND L13
L22            25 SEA L2 AND L6 AND L14
L23             9 SEA L3 AND L7 AND L15
     TOTAL FOR ALL FILES
L24            46 SEA L4 AND L8 AND L16
L25             1 SEA L21 AND L17
L26             1 SEA L22 AND L18
L27             0 SEA L23 AND L19
     TOTAL FOR ALL FILES
L28             2 SEA L24 AND L20

     FILE 'REGISTRY'
                  E POLYETHER/PCT
L29        243670 SEA POLYETHER/PCT
                  E POLYURETHANE/PCT
L30         66590 SEA POLYURETHANE/PCT
                  E POLYACRYLIC/PCT
L31        294318 SEA POLYACRYLIC/PCT
L32          7088 SEA L29 AND L30 AND L31

     FILE 'HCA'
L33          3152 SEA L32
L34             0 SEA L21 AND L33
```

```
L35          12 SEA L21 OR L25

    FILE 'WPIDS'
L36          25 SEA L22 OR L26



=> file hca
FILE 'HCA'
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)


=> d l35 1-12 cbib abs hitind
```

L35 ANSWER 1 OF 12 HCA COPYRIGHT 2004 ACS on STN
139:221328 Fabrication of diffractive **optical** elements on-**fiber** for photonic applications by nanolithography. Prasciolu, Mauro; Candeloro, Patrizio; Kumar, Rakesh; Businaro, Luca; Di Fabrizio, Enzo; Cojoc, Dan; Cabrini, Stefano; Liberale, Carlo; Degiorgio, Vittorio (LILIT Beamline, National Nanotechnology Laboratory-TASC, Istituto Nazionale per la Fisica della Materia (INFM) at Elettra, Trieste, 34012, Italy). Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers, 42(6B), 4177-4180 (English) 2003. CODEN: JAPNDE. Publisher: Japan Society of Applied Physics.

AB The present research work is devoted to the realization of efficient **fiber**-waveguide **optical** coupling between single-mode fiber and rectangular wave guide by fabricating a multilevel diffractive phase element on the top of the fiber by nanolithog. This optical arrangement is able to redistribute the diffractive **electromagnetic field** on a selected area by a suitable phase modulation of the light, in analogy with what happens for Fresnel Zone Plates Lens. The design of diffractive optical elements was realized using the own algorithm and code. The out-coming laser beam exiting from the fiber has a Gaussian transversal field in contrast to single-mode wave-guide which has an asym. transversal field distribution in X and Y direction. Phase modulation was accomplished by multilevel profiling a polymeric material coated on the top of the fiber by a specific fabrication process including **e-beam** lithog. and chem. etching. Focalization expts. for a fiber-waveguide coupling with a 20 μm diam. diffractive element were made using λ = 1550 nm laser are discussed.

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST diffractive **optical** element **fiber** photonic application nanolithog

IT **Optical fibers**
(fabrication of diffractive optical elements for photonic applications by nanolithog. on)

IT Waveguides
(fabrication of diffractive **optical** elements on-**fiber** for photonic applications by nanolithog.)

IT Polymers, uses
(fabrication of diffractive **optical** elements on-**fiber** for photonic applications by nanolithog.)

IT Lithography
(nano-; fabrication of diffractive **optical** elements on-**fiber** for photonic applications by)

IT 9011-14-7, PMMA
(fabrication of diffractive **optical** elements on-**fiber** for photonic applications by nanolithog.)

L35 ANSWER 2 OF 12 HCA COPYRIGHT 2004 ACS on STN

138:177024 Optical accelerator: scaling laws and figures of merit. Schaechter, Levi; Byer, Robert L.; Siemann, Robert H. (Electrical Engineering Department, Technion - IIT, Haifa, 32000, Israel). AIP Conference Proceedings, 647(Advanced Accelerator Concepts), 310-323 (English) 2002. CODEN: APCPCS. ISSN: 0094-243X. Publisher: American Institute of Physics.

AB Indications that solid-state lasers will reach wall-plug to light efficiencies of 30% or more make a laser-driven vacuum-accelerator increasingly appealing. Since at the wavelength of relevant lasers, dielecs. may sustain significantly higher elec. field and transmit power with reduced loss comparing to metals, the basic assumption is that laser accelerator structures will be dielecs. For structures that have typical dimensions of a few microns, present manufg. constraints entail planar structures that in turn, require reevaluation of many of the scaling laws that were developed for azimuthally sym. structures. Also, structures that operate at a wavelength of a few centimeters are machined today with an accuracy of microns. In future it will not be possible to maintain 4-5 orders of magnitude difference between operating wavelength and achievable tolerance. An addnl. difference is, that contrary to present accelerators where the no. of electrons in a micro-bunch is of the order of a 1010, in an optical structure this no. drops to a few thousands. Consequently, the relative **impact** of individual **electrons** may be significantly larger. Acceleration structures with higher degree of symmetry, similar to **optical fibers**, have also some inherent advantages however thermal gradients as well as heat dissipation may become crit. impediments. The impact of all these factors on the performance of a laser accelerator structure needs to be detd.

Efficiency, wakes and emittance scaling laws that have been developed recently will be presented. There are some inherent advantages in combining the accelerator structure and the laser cavity in one system.

CC 71-1 (Nuclear Technology)
Section cross-reference(s): 73, 76

IT **Electromagnetic field**
(in relation to figures of merit for solid-state laser-driven vacuum-accelerator)

IT **Electron beams**
(in relation to solid-state laser-driven vacuum-accelerator)

L35 ANSWER 3 OF 12 HCA

137:161271 Preparation of **optical fibers** by applying a liq. **electron beam**-curable resin on a bare **optical fiber** followed by **electron beam irradiation** in **magnetic field.** Ohba, Toshio; Kawada, Nobuo; Ueno, Masaya (Japan). U.S. Pat. Appl. Publ. US 2002112508 A1 20020822, 15 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-77975 20020220. PRIORITY: JP 2001-43407 20010220; JP 2001-189609 20010622.

AB Methods for prepg. **optical fibers** are discussed which entail applying a liq. compn. of an **electron beam**-curable resin to a bare **optical fiber** or a coated **optical fiber** having a primary or secondary coating on a bare **optical fiber, irradiating electron beams** to the resin compn. on the **optical fiber** for curing while the **optical fiber** passes a zone under substantially atm. pressure, and providing a **magnetic field** in the zone for thereby improving the efficiency of **electron irradn.** In addn. to the **magnetic field,** an elec. field can be provided in the zone so that the **electron beams** pass across the elec. **field** and the **magnetic field** to two-dimensionally converge on the **optical fiber.**

IC ICM C03C025-62

NCL 065425000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 76, 77

ST **optical fiber** prepn **electron beam** curing resin **magnetic field;** curable polymer liq **optical fiber** manufg **electron beam irradn**

IT **Polyurethanes,** uses
(**acrylic-polyether-**, liq. **electron beam**-curable resin; prepn. of **optical**

fibers by applying liq. **electron beam** -curable resin on bare **optical fiber** followed by **electron beam irradn.** in **magnetic field**)

IT **Polyethers,** uses
(**acrylic-polyurethane-,** liq. **electron beam**-curable resin; prepn. of **optical fibers** by applying liq. **electron beam** -curable resin on bare **optical fiber** followed by **electron beam irradn.** in **magnetic field**)

IT Polymers, uses
(**electron beam**-curable; prepn. of **optical fibers** by applying liq. **electron beam**-curable resin on bare **optical fiber** followed by **electron beam irradn.** in **magnetic field**)

IT Crosslinking
(**electron-beam** induced curing; prepn. of **optical fibers** by applying liq. **electron beam**-curable resin on bare **optical fiber** followed by **electron beam irradn.** in **magnetic field**)

IT Noble gases, uses
(fiber coating in atm. of; prepn. of **optical fibers** by applying liq. **electron beam** -curable resin on bare **optical fiber** followed by **electron beam irradn.** in **magnetic field**)

IT **Electron beams**
(**irradn., irradn.** efficiency; prepn. of **optical fibers** by applying liq. **electron beam**-curable resin on bare **optical fiber** followed by **electron beam irradn.** in **magnetic field**)

IT **Optical fibers**
(polymer-coated; prepn. of **optical fibers** by applying liq. **electron beam**-curable resin on bare **optical fiber** followed by **electron beam irradn.** in **magnetic field**)

IT Electric field effects
(prepn. of **optical fibers** by applying liq. **electron beam**-curable resin on bare **optical fiber** followed by **electron**

beam irradn. in **magnetic** and elec.
fields)

IT **Magnetic field** effects
(prepn. of **optical fibers** by applying liq. **electron beam**-curable resin on bare **optical fiber** followed by **electron beam irradn.** in **magnetic field**)

IT Coating materials
(**radiation**-curable, **electron beam** -curable; prepn. of **optical fibers** by applying liq. **electron beam**-curable resin on bare **optical fiber** followed by **electron beam irradn.** in **magnetic field**)

IT 7440-59-7, Helium, uses 7727-37-9, Nitrogen, uses
(fiber coating in atm. of; prepn. of **optical fibers** by applying liq. **electron beam** -curable resin on bare **optical fiber** followed by **electron beam irradn.** in **magnetic field**)

L35 ANSWER 4 OF 12 HCA COPYRIGHT 2004 ACS on STN

134:272657 Studies of the response of the prototype CMS hadron calorimeter, including **magnetic field** effects, to pion, **electron**, and muon **beams**. Abramov, V. V.; Acharya, B. S.; Akchurin, N.; Atanasov, I.; Baiatian, G.; Ball, A.; Banerjee, S.; Banerjee, S.; de Barbaro, P.; Barnes, V.; Bencze, G.; Bodek, A.; Booke, M.; Budd, H.; Cremaldi, L.; Cushman, P.; Dugad, S. R.; Dimitrov, L.; Dyshkant, A.; Elias, J.; Evdokimov, V. N.; Fong, D.; Freeman, J.; Genchev, V.; Goncharov, P. I.; Green, D.; Gurtu, A.; Hagopian, V.; Iaydjiev, P.; Korneev, Y.; Krinitsyn, A.; Krishnaswami, G.; Krishnaswamy, M. R.; Kryshkin, V.; Kunori, S.; Laasanen, A.; Lazic, D.; Levchuk, L.; Litov, L.; Mondal, N. K.; Moulik, T.; Narasimham, V. S.; Nemashkalo, A.; Onel, Y.; Petrov, P.; Petukhov, Y.; Piperov, S.; Popov, V.; Reidy, J.; Ronzhin, A.; Ruchti, R.; Singh, J. B.; Shen, Q.; Sirunyan, A.; Skuja, A.; Skup, E.; Sorokin, P.; Sudhakar, K.; Summers, D.; Szoncso, F.; Tereshenko, S. I.; Timmermans, C.; Tonwar, S. C.; Turchanovich, L.; Tyukov, V.; Volodko, A.; Yukaev, A.; Zaitchenko, A.; Zatserklyaniy, A. (Institute for High Energy Physics, Protvino, Russia). Nuclear Instruments & Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors, and Associated Equipment, 457(1-2), 75-100 (English) 2001. CODEN: NIMAER. ISSN: 0168-9002. Publisher: Elsevier Science B.V..

AB The response of a prototype hadron calorimeter for the Compact Muon Solenoid (CMS) detector to pion, muon, and **electron beams** with momenta up to 375 GeV/c is studied. The

calorimeter use Cu absorber plates and scintillator tiles with wavelength shifting fibers for readout. The effects of **magnetic fields** up to 3 T on the response of the calorimeter to muons, electrons, and pions are presented. The influence of an upstream lead tungstate crystal electromagnetic calorimeter on the linearity and energy resoln. of the combined calorimetric system to hadrons, is evaluated. The results are compared with Monte Carlo simulations and are used to optimize the choice of total absorber depth, sampling frequency, and longitudinal readout segmentation.

CC 71-7 (Nuclear Technology)
Section cross-reference(s): 77

ST radiation detector calorimeter pion electron muon **magnetic field** effect; calorimeter Monte Carlo simulation optimize response

IT Simulation and Modeling, physicochemical
(Monte Carlo; response of prototype CMS hadron calorimeter to pion, **electron**, and muon **beams**)

IT **Fiber optics**
(**fiber-optic** couplers; response of prototype CMS hadron calorimeter to pion, **electron**, and muon **beams**)

IT **Optical** couplers
(**fiber-optic**; response of prototype CMS hadron calorimeter to pion, **electron**, and muon **beams**)

IT Gamma ray
(irradn.; response of prototype CMS hadron calorimeter to pion, **electron**, and muon **beams**)

IT Absorbents
Calorimetric radiation detectors
Electron beams
Magnetic field effects
Scintillation detectors
(response of prototype CMS hadron calorimeter to pion, **electron**, and muon **beams**)

IT Hadrons
(response of prototype CMS hadron calorimeter to pion, **electron**, and muon **beams**)

IT Superconductor devices
(solenoids; response of prototype CMS hadron calorimeter to pion, **electron**, and muon **beams**)

IT Solenoids
(superconducting; response of prototype CMS hadron calorimeter to pion, **electron**, and muon **beams**)

IT 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7440-50-8, Copper, uses 11101-35-2 12597-68-1, Stainless steel, uses
(response of prototype CMS hadron calorimeter to pion,

electron, and muon **beams**)

IT 7759-01-5, Lead tungsten oxide (PbWO4) 12587-60-9, Muon 12587-68-7, Pion
(response of prototype CMS hadron calorimeter to pion, **electron**, and muon **beams**)

L35 ANSWER 5 OF 12 HCA COPYRIGHT 2004 ACS on STN

132:174949 Inorganic hydrogen and hydrogen polymer compounds and applications thereof. Mills, Randell L. (USA). PCT Int. Appl. WO 2000007931 A2 20000217, 385 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US17129 19990729. PRIORITY: US 1998-95149 19980803; US 1998-101651 19980924; US 1998-105752 19981026; US 1998-113713 19981224; US 1999-123835 19990311; US 1999-130491 19990422; US 1999-141036 19990629.

AB Compds. are provided comprising at least one neutral, pos., or neg. hydrogen species having a binding energy greater than its corresponding ordinary hydrogen species, or greater than any hydrogen species for which the corresponding ordinary hydrogen species is unstable or is not obsd. Compds. comprise at least one increased binding energy hydrogen species and at least one other atom, mol., or ion other than an increased binding energy hydrogen species. One group of such compds. contains one or more increased binding energy hydrogen species selected from the group consisting of Hn, Hn-, and Hn-, where n is a pos. integer, with the proviso that n > 1 when H has a pos. charge. Another group of such compds. may have the formula [MHmM'X]n wherein m and n are each an integer, M and M' are each an alkali or alk. earth cation, X is a singly or doubly neg. charged anion, and the hydrogen content Hm of the compd. comprises at least one increased binding energy hydrogen species. Methods of forming the compds. and numerous applications are disclosed. A method for forming the compds. comprises reacting gaseous hydrogen atoms with a gaseous metal catalyst (list of metals provided) and reaction of the formed hydrino atoms with at least one selected from the group of a **source** of **electrons** (H+, increased binding energy hydrogen species, other element). A method for extg. energy from H atoms further comprises the step of applying an adjustable elec. or **magnetic field** to control the rate of energy release. Thus, potassium iodo hydride (KHI) comprising high binding energy hydride ions (hydrino hydrides) are prepd. by reaction of at. hydrogen with potassium iodide in the presence of potassium metal catalyst in a stainless steel gas cell

(app. diagrams provided). The blue crystals were characterized by a no. of methods (ToF-SIMS, XPS, 1H and 39K MAS NMR, FTIR, Electrospray-Ionization-Time-of-Flight Mass Spectroscopy, LC/MS, elemental anal., thermal decompn.). The compd. contains two forms of hydride ion; thermal decompn. with mass spectral anal. indicates at least H-(1/2) is present in KHI which may be responsible for the blue color. The objective of the invention is to provide compds. that can be used in a wide variety of applications, e.g., batteries, fuel cells, cutting materials, light-wt. high-strength materials and synthetic fibers, corrosion or heat-resistant coatings, xerog. compds., proton source, photoluminescent compds., phosphors for lighting, UV and visible light source, photoconductors, photovoltaics, chemiluminescent or fluorescent compds., optical coatings or filters, extreme UV laser media, **fiber optic** cables, magnets and magnetic computer storage media, superconductors, etching agents, masking agents, agents to purify silicon, dopants in semiconductor fabrication, cathodes for thermoionic generators, fuels, explosives, and propellants. Claimed uses of the present invention include sepn. of isotopes, a proton source, xerog. toner, use in a magnet or magnetic computer memory storage material, or as an etching agent. Time-of-flight secondary ion mass spectral data (ToF-SIMS) are listed for a wide variety of hydrino hydride compds. or their fragments.

IC ICM C01B006-00

CC 78-5 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 50, 52, 67, 71, 76, 79

L35 ANSWER 6 OF 12 HCA COPYRIGHT 2004 ACS on STN

130:30991 Scanning near field optical microscope. Sato, Katsuaki; Mitsuoka, Yasuyuki; Nakajima, Kunio (Seiko Instruments Inc., Japan). Eur. Pat. Appl. EP 880043 A2 19981125, 17 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1998-304109 19980522. PRIORITY: JP 1997-134178 19970523.

AB Scanning near-field optical microscopes are described which measure polarized light returned from the sample and which incorporate means for maintaining the probe tip at a fixed interval from a sample at which an interactive force results between the tip and surface (e.g., as in an at. force microscope). The microscopes may incorporate means for modulating the light **beam** used (**e**.g., for circular polarization modulation, the beam is given an optical delay before it is incident on the **optical fiber** probe by means of a piezo-optical modulator). Use for measuring the distribution of magnetooptical effects is indicated.

IC ICM G02B021-00
ICS G01B007-34; G01N021-21; G02B006-10

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 66, 75, 77
ST scanning near field optical microscope; **magnetooptical** effect near **field** optical microscope

L35 ANSWER 7 OF 12 HCA COPYRIGHT 2004 ACS on STN
126:205009 Two-dimensional Cherenkov emission array for studies of relativistic electron dynamics in a laser plasma. Gordon, D.; Lal, A.; Wharton, K.; Clayton, C. E.; Joshi, C. (Dep. of Electrical Engineering, University of California, Los Angeles, CA, 90024, USA). Review of Scientific Instruments, 68(1, Pt. 2), 358-360 (English) 1997. CODEN: RSINAK. ISSN: 0034-6748. Publisher: American Institute of Physics.
AB In laser-produced plasmas there are several effects which will scatter a longitudinally probing relativistic **electron beam.** In vacuum, the laser itself will ponderomotively defocus the **electron beam,** while in plasma the ponderomotive force can dig an ion channel which would focus the **electron beam.** In the cases of plasma wave excitation via the beat-wave or wake-field mechanisms, the thermalization of the electron distribution function can lead to large scale **magnetic fields** via the Weibel instability. One way of studying such phenomena is to time resolve the transverse current distribution of the **electron beam** after it exits the plasma. A wire mesh has insufficient time resoln. for this purpose, so the authors instead use a mesh of **optical fibers.** When the **electron beam strikes** the fiber mesh, Cherenkov radiation is generated within whichever fibers have current running across them. The Cherenkov radiation from all the fibers can then be analyzed on a streak camera. This allows the reconstruction of j(x,y,t) where j is the c.d. The authors have successfully implemented this technique in the study of beat-excited laser plasmas.
CC 73-6 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST Cherenkov **emission** array relativistic **electron** dynamics; laser plasma Cherenkov radiation
IT **Electron beams**
(relativistic; two-dimensional Cherenkov emission array for studies of relativistic electron dynamics in a laser plasma)
IT **Optical fibers**
(two-dimensional Cherenkov emission array for studies of relativistic electron dynamics in laser plasma using mesh of **optical fibers**)

L35 ANSWER 8 OF 12 HCA COPYRIGHT 2004 ACS on STN
125:182863 Local optical emission spectroscopy of excited species effused from an evaporation cell and a sputter source into dense

plasmas - basic studies for the deposition of thin gradient films. Bolt, H.; Hemel, V.; Koch, F.; Nickel, H. (Forschungszentrum Juelich, Inst. Werkstoffe Energietech., Juelich, D-52425, Germany). Fresenius' Journal of Analytical Chemistry, 355(3-4), 247-249 (English) 1996. CODEN: FJACES. ISSN: 0937-0633. Publisher: Springer.

AB Space resolved optical emission spectroscopy was applied to det. the distribution of excited species in dense plasmas which are used for the deposition of thin coatings. Typical electron densities and electron temps. in the plasma facility PETRA (Plasma Engineering and Technol. Research Assembly) are in the range of ne = 1012 cm-3 and Te = 10 eV. During the deposition process material (Al) is evapd. from a vapor cell under controlled conditions. The vapor stream is guided into a dense plasma which is composed of inert gas, Ar or He, and hydrocarbon species produced from the dissocn. of C2H2. The evapd. Al-stream which travels with thermal velocity into a plasma of high electron d., is nearly completely ionized due to the short mean free path for **electron impact** ionization in the above mentioned parameter range. Optical emission spectroscopy was applied to study the interaction processes between the vapor stream and the plasma as well as the transport of the ionized Al along the applied **magnetic field**. For the measurements space resolved optical emission spectroscopy with an in-situ translation mechanism of the **optical fiber** was used to measure the local concns. of excited Al neutrals and ions as well as the concn. of the background plasma species.

CC 76-11 (Electric Phenomena)

L35 ANSWER 9 OF 12 HCA COPYRIGHT 2004 ACS on STN

115:140883 Development of the quadrupole plasma chemical-vapor deposition method for low-temperature, high-speed coating on an **optical fiber**. Kashima, Takeshi; Matsuda, Yoshinobu; Fujiyama, Hiroshi (Fac. Eng., Nagasaki Univ., Nagasaki, 852, Japan). Materials Science & Engineering, A: Structural Materials: Properties, Microstructure and Processing, A139, 79-84 (English) 1991. CODEN: MSAPE3. ISSN: 0921-5093.

AB For the purpose of low-temp., high-speed coating of fine filiaments such as heavy metal fluoride **optical fibers**, a plasma-enhanced CVD method using quadrupole electrodes is presiented. The fundamental discharge characteristics in a 10% CH4-H2 gas was studied and the substrate temp. was detd. using the temp. dependence of the elec. resistance. The substrate temp. could be kept below the glass transformation temp. of .apprx.300° by cooling the electrodes. A **magnetic field** was applied perpendicular to the discharge elec. field to increase the neutral radical species which were generated by **collision** with **electrons** (the magnetron effect). Then the CH* optical emission intensity from the center of the quadrupole

electrodes has a max. value for some value of the **magnetic flux** d. The trial prepn. of an amorphous C thin film on an **optical fiber** was successfully performed.

CC 57-1 (Ceramics)
Section cross-reference(s): 73

ST **optical fiber** coating CVD low temp; plasma CVD coating low temp fiber

IT **Optical fibers**
(coating of, with amorphous carbon by low-temp. plasma-enhanced CVD)

IT **Magnetic field**, chemical and physical effects
(in plasma-enhanced CVD at low temp., for amorphous carbon coatings on **optical fiber**)

IT Electrodes
(quadrupole, in plasma-enhanced CVD at low temp., for amorphous carbon coatings on **optical fiber**)

IT Coating process
(chem.-vapor, low-temp. plasma-enhanced, with amorphous carbon on **optical fiber**)

IT 7440-44-0, Carbon, uses and miscellaneous
(coating with amorphous, on **optical fiber** by low-temp. plasma-enhanced CVD)

L35 ANSWER 10 OF 12 HCA COPYRIGHT 2004 ACS on STN

111:221198 Calculation and measurement of birefringence in **optical fibers.** Sochor, V.; Paulicka, I.; Loncar, G. (Prague Politech. Inst., Prague, Czech.). Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 53(8), 1524-6 (Russian) 1989. CODEN: IANFAY. ISSN: 0367-6765.

AB A new method was used for calcg. the components of thermoelastic stress, i.e. the method of boundary elements, with increased accuracy of calcn. Calcns. were made of **optical fibers** of the PANDA type with an elliptical core and an elliptical cross section of insertion rods. The birefringence in this case exceeds by several fold the value of the birefringence of the std. fiber of PANDA type. A method was exptl. developed of the modulation of **radiation** (e.g., from a He-Ne laser) polarization in a fiber by an external **magnetic field.** The length of the pulse of **optical fibers** of different types was measured, and the accuracy was established in the region of applicability of the method. Application to data recorders of interference type and the use of more complex schemes for detecting signals in devices using optical coupling are mentioned.

CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST birefringence **optical fiber** calcn; laser radiation polarization **optical fiber**

IT **Optical fibers**
(birefringence of)
IT Birefringence
(detn. of, of **optical fibers**)
IT Laser radiation, chemical and physical effects
(in birefringence study of **optical fibers**)

L35 ANSWER 11 OF 12 HCA COPYRIGHT 2004 ACS on STN
102:13547 A novel probe for determining the size and position of a relativistic **electron beam.** Orzechowski, T. J.; Koehler, Helmut; Edwards, W.; Nelson, M.; Marshall, B. (Lawrence Livermore Natl. Lab., Univ. California, Livermore, CA, 94550, USA). Proceedings of SPIE-The International Society for Optical Engineering, 506(Fiber Opt. Adverse Environ. 2), 36-9 (English) 1984. CODEN: PSISDG. ISSN: 0277-786X.
AB To det. the size and position of a relativistic **e beam** inside the wiggler **magnetic field** of a Free Electron Laser (FEL), a new probe was developed which intercepts the **e beam** on a high Z target and monitors the resulting bremsstrahlung radiation. The probe is designed to move along the entire 3 m of the wiggler. This FEL is designed to operate in the microwave region (2-8 mm) and the interaction region is an oversized waveguide with a cross section 3 + 9.8 cm. The axial probe moves inside this waveguide. The probe stops the **e beam** on a Ta target and the resulting x-ray are scattered in the forward direction. A scintillator behind the beam stop reacts to the x-rays and emits visible light in the region where the x-rays strike. An array of **fiber optics** behind the scintillator transmits the visible light to a Reticon camera system which images the visible pattern from the scintillator. Processing the optical image is done by digitizing and storing the image and/or recording the image on video tape. Resoln. and performance of this probe is discussed.
CC 71-1 (Nuclear Technology)
ST relativistic **electron beam** probe; **optical fiber electron beam** size
IT **Fiber optics**
(**electron beam** size and position detn. with, relativistic)
IT **Electron beam**
(relativistic, size and position detn. of, **optical fibers** in)

L35 ANSWER 12 OF 12 HCA COPYRIGHT 2004 ACS on STN
94:38434 TWCP **electron beam** testing program. Volume III. Material response instrumentation for the Blackjack III **electron beam** facility. Bick, F. A. (Effects

Technol. Inc., Santa Barbara, CA, USA). Report,
ETI-CR-79-610-VOL-3, DNA-5036F-3, AD-E300 844; Order No. AD-A086307,
46 pp. Avail. NTIS From: Gov. Rep. Announce. Index (U. S.) 1980,
80(22), 4747 (English) 1979.

AB The instrumentation is described that was developed to characterize the Blackjack III pulsed **electron beam** facility environment, and to obtain pulse and stress generation data on FM5822A carbon phenolic, and 91-LD phenolic resin. The primary diagnostical contribution was the development of an in situ fluence measurement technique that significantly reduced exptl. uncertainties. Impulse data were obtained using a translating Ronchi ruling and **fiber optic** light guide. Stress data were obtained simultaneously with the pulse measurements using a laser interferometer. This technique increased the amt. of data obtained, and also provides a direct correlation between the pulse and stress data. These gages were all designed to operate in the intense radiation environment assocd. with a pulsed **electron beam** machine, and also in the **magnetic field** (25 kG) used to guide the **electron beam.**

CC 71-13 (Nuclear Technology)
Section cross-reference(s): 35

IT Stress, mechanical
(detn. of, of material tested at Blackjack III **electron beam** facility)

IT Phenolic resins, properties
(**electron beam** testing facility for, material response instrumentation for)

IT **Electron beam,** chemical and physical effects
(facilities, material response instrumentation for Blackjack III)

IT Instrumentation
(for **electron beam** facility for material testing)

IT 7440-44-0, properties
(phenolic contg., instrumentation for **electron beam** facility testing of)

=> file japio
FILE 'JAPIO' ENTERED AT 22:37:53 ON 05 AUG 2004

FILE LAST UPDATED: 2 AUG 2004 <20040802/UP>
FILE COVERS APR 1973 TO APRIL 30, 2004

=> d 123 1-9 ibib abs ind

L23 ANSWER 1 OF 9 JAPIO (C) 2004 JPO on STN
ACCESSION NUMBER: 2003-002697 JAPIO
TITLE: METHOD FOR PRODUCING **OPTICAL FIBER**
INVENTOR: KAWADA ATSUO; OBA TOSHIO
PATENT ASSIGNEE(S): SHIN ETSU CHEM CO LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2003002697	A	20030108	Heisei	C03C025-10

APPLICATION INFORMATION
STN FORMAT: JP 2001-189609 20010622
ORIGINAL: JP2001189609 Heisei
PRIORITY APPLN. INFO.: JP 2001-189609 20010622
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2003
AN 2003-002697 JAPIO
AB PROBLEM TO BE SOLVED: To provide a method for producing and **optical fiber** characterized in that an **electron beam** is passed through an electric **field** and a **magnetic field** and converged two-dimensionally onto the **optical fiber** by providing combinedly the electric **field** and the **magnetic field** in an **optical fiber** passing zone, in coating an **optical fiber** bare wire or an **optical fiber** core wire coated with a primary or secondary coating with a liquid composition of an **electron beam** curable resin, and irradiating it with the **electron beam** to cure it under substantially atmospheric condition.
SOLUTION: According to this invention, the **electron beam irradiation** efficiency is high, and the **optical fiber** can be produced, by efficiently curing the liquid composition of the coated **electron beam** curable resin.

IC ICM C03C025-10
ICS G02B006-44

L23 ANSWER 2 OF 9 JAPIO (C) 2004 JPO on STN
ACCESSION NUMBER: 2002-249345 JAPIO
TITLE: METHOD FOR MANUFACTURING **OPTICAL FIBER**
INVENTOR: OBA TOSHIO; KAWADA ATSUO; UENO MASAYA
PATENT ASSIGNEE(S): SHIN ETSU CHEM CO LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2002249345	A	20020906	Heisei	C03C025-10

APPLICATION INFORMATION
STN FORMAT: JP 2001-43407 20010220
ORIGINAL: JP2001043407 Heisei
PRIORITY APPLN. INFO.: JP 2001-43407 20010220
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2002
AN 2002-249345 JAPIO
AB PROBLEM TO BE SOLVED: To provide a core wire of an **optical fiber** coping with the high wiredrawing speed of **optical fibers** without losing transmission property.
SOLUTION: When a liquid composition of an electron bean curable resin is coated on a bare wire of the **optical fiber** and **irradiated** with an **electron beam** under almost atmospheric pressure, **magnetic field** is place on the part for passing the **optical fiber** so that the irradiation efficiency is improved.

IC ICM C03C025-10
ICS C03C025-24; G02B006-44

L23 ANSWER 3 OF 9 JAPIO (C) 2004 JPO on STN
ACCESSION NUMBER: 2002-022898 JAPIO
TITLE: **ELECTRON BEAM IRRADIATOR**
INVENTOR: MIYAKE YOSHINOBU; ETO KIICHI
PATENT ASSIGNEE(S): TAIYO MATERIAL:KK
IWASAKI ELECTRIC CO LTD
SHIN ETSU CHEM CO LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2002022898	A	20020123	Heisei	G21K005-04

APPLICATION INFORMATION
STN FORMAT: JP 2000-205112 20000706
ORIGINAL: JP2000205112 Heisei
PRIORITY APPLN. INFO.: JP 2000-205112 20000706
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2002
AN 2002-022898 JAPIO
AB PROBLEM TO BE SOLVED: To provide an **electron beam**

irradiator of an all-round irradiation type which can be used to harden a resin that covers a core such as an **optical fiber**.
SOLUTION: An intermediate cylindrical electrode 7 with an **electron beam** passage hole 11 is coaxially placed inside a cylindrical magnet 8 located in a vacuum container 1, and an anode 6 is placed in a central axis. A potential difference is given between the cylindrical magnet 8 and the intermediate cylindrical electrode 7 by a magnetron discharge power source 9 to generate magnetron discharge plasma F. A voltage that is negative to an anode 8 is applied to the intermediate cylindrical electrode 7 by an acceleration power source 10 to jet out electrons in the plasma F from the **electron beam** passage hole 11 and accelerate them toward the anode 6. A magnetic material is used as a material for the intermediate cylindrical electrode 7 to block a **magnetic field** leaking into an acceleration space.
An **optical fiber** 4 is irradiated in the atmosphere A by making an **electron beam irradiation** section of the anode 6 of a titanium thin-wall pipe and running the **optical fiber** 4 in the center of the pipe.

IC ICM G21K005-04
ICS G02B006-44; G21K001-00; G21K005-00; G21K005-10; H01B013-14

L23 ANSWER 4 OF 9 JAPIO (C) 2004 JPO on STN
ACCESSION NUMBER: 1995-043392 JAPIO
TITLE: LIGHTNING CURRENT MEASURING METHOD
INVENTOR: TANAHARA MAMORU
PATENT ASSIGNEE(S): FURUKAWA ELECTRIC CO LTD:THE
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 07043392	A	19950214	Heisei	G01R015-24

APPLICATION INFORMATION
STN FORMAT: JP 1993-208764 19930730
ORIGINAL: JP05208764 Heisei
PRIORITY APPLN. INFO.: JP 1993-208764 19930730
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1995
AN 1995-043392 JAPIO
AB PURPOSE: To allow measurement of lightning current by varying the rotational angle of the plane of polarization of measuring light according to the variation of **magnetic field** generated around the lightning current and then converting the rotational angle into the intensity of light.

CONSTITUTION: A light (measuring light) **emitted** from an **E**/O converter 11 passes through an **optical fiber** 21 and a rod lens 22 thence through a rectangular parallelepiped polarizer 23 to produce a linearly polarized light. The linearly polarized light impinges on a rectangular parallelepiped **magnetooptical field** sensor 2 which rotates the plane of polarization of the measuring light by an angle Q under influence of the **magnetic field.** The rotational angle 9 is converted into the intensity of light by means of a rectangular parallelepiped analyzer 24 disposed on the output side of a magnetooptical element 3. The light passes through a rod lens 25 and an **optical fiber** 26 and the intensity of measuring light is detected by means of an E/O converter 12, e.g. a photodiode, thus measuring the lightning current.

IC ICM G01R015-24

L23 ANSWER 5 OF 9 JAPIO (C) 2004 JPO on STN
ACCESSION NUMBER: 1991-259114 JAPIO
TITLE: WAVELENGTH MULTIPLEXED LIGHT RECEIVING METHOD
INVENTOR: UESUGI FUMITO; ISHIMURA EITARO
PATENT ASSIGNEE(S): MITSUBISHI ELECTRIC CORP
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 03259114	A	19911119	Heisei	G02F001-09

APPLICATION INFORMATION
STN FORMAT: JP 1990-58394 19900308
ORIGINAL: JP02058394 Heisei
PRIORITY APPLN. INFO.: JP 1990-58394 19900308
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1991
AN 1991-259114 JAPIO
AB PURPOSE: To attain wavelength demultiplexing by rotating the plane of polarization of wavelength multiplexed light, generating a difference in angle of rotation between the planes of polarization of light beams having respective wavelength and demultiplexing the light beams having the respective wavelengths by using the difference in the angle of rotation among the planes of polarization, and receiving the light.
CONSTITUTION: Light of oscillation frequency is superposed upon wavelength multiplexed light 2 which is transmitted through an **optical fiber** 1. The light 2 which is adjusted in oscillation frequency is converted into linear polarized light whose plane of polarization is equalized through a polarizer 3 and then

made incident on a Faraday rotator 4. A **magnetic field** is applied to this Faraday rotator 4 to rotates the plane of polarization. For the purpose, the length of the Faraday rotator 4 and the intensity of the applied **magnetic field** are controlled and then linear polarized light 5 whose plane of polarization deviates by, for example, 90° is split by a beam splitter 6 into two light **beams, i.e.** transmitted light and reflected light. Thus, when the wavelength multiplex light 2 is split by wavelengths, the difference in angle of rotation is generated between the planes of polarization of the respective wavelength light beams, which are separated by the polarizer 3 to reduce the loss at the time of separating, so that the light beams can easily be separated and received.

IC ICM G02F001-09

L23 ANSWER 6 OF 9 JAPIO (C) 2004 JPO on STN
ACCESSION NUMBER: 1988-238586 JAPIO
TITLE: BEAM PROFILE MEASURING INSTRUMENT
INVENTOR: YAMADA HIROSHIGE
PATENT ASSIGNEE(S): SUMITOMO HEAVY IND LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 63238586	A	19881004	Showa	G01T001-29

APPLICATION INFORMATION
STN FORMAT: JP 1987-71805 19870327
ORIGINAL: JP62071805 Showa
PRIORITY APPLN. INFO.: JP 1987-71805 19870327
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1988
AN 1988-238586 JAPIO
AB PURPOSE: To measure the profile of a charged particle beam even when a measuring instrument is used in an intense **magnetic field** by using light emitted when a charged particle beam strikes on a photomultiple wire.
CONSTITUTION: When a fast **electron beam impinges** on the photomultiple wire 1, respective **optical fiber** wires which constitute the photomultiple wire 1 emit Cherenkov light. The intensity of the emitted Cherenkov light is proportional to the number of **electrons striking** on the wire. The Cherenkov light from the respective **optical fibers** 2 is inputted to light emitting diodes 3 respectively and converted into electric signals. The electric signals from the respective light emitting diodes 3 are multiplexed by an analog multiplexer 4, sent

to a computer through an analog-digital converter 5, and processed. The computer finds the profile of the **electron beam** according to the Cherenkov light from the photomultiple wire 1. Namely, the intensity distribution in beam section is obtained.

IC ICM G01T001-29
ICS G01T001-00; G21K005-04; H01J037-04

L23 ANSWER 7 OF 9 JAPIO (C) 2004 JPO on STN
ACCESSION NUMBER: 1987-297828 JAPIO
TITLE: LIQUID CRYSTAL OPTICAL SWITCH
INVENTOR: TANEI HEIKICHI; KAWAMOTO KAZUTAMI; ARIMA HIDEO
PATENT ASSIGNEE(S): HITACHI LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 62297828	A	19871225	Showa	G02F001-31

APPLICATION INFORMATION
STN FORMAT: JP 1986-140014 19860618
ORIGINAL: JP61140014 Showa
PRIORITY APPLN. INFO.: JP 1986-140014 19860618
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1987
AN 1987-297828 JAPIO
AB PURPOSE: To form a liquid crystal switch low in loss by using plural reflecting surfaces and a liquid crystal cell and switching the advancing direction of light in the same direction or the reverse direction in accordance with a state whether a **magnetic field** is applied to a half of one side of the liquid crystal cell or not.
CONSTITUTION: Light beams paralleled by a lens 5 are reflected by a reflecting surface 11 and made incident upon an interface between a glass 6 and a liquid crystal film 9 at a prescribed incident angle. When the incident angle is larger than the critical angle of full reflection, polarized **beams E**<SB>11</SB> are fully reflected and polarized beams EL are transmitted. Then respective polarized beams are respectively reflected by reflecting surfaces 15, 16, made incident upon a liquid crystal film 9 corresponding to a right half, the polarized **beams E**<SB>11</SB> are fully reflected, and the polarized beams EL are transmitted. The polarized **beams E** <SB>11</SB>, EL having the same advancing direction are reflected by a reflecting surface 14, converged by a lens 5 and reached to an **optical fiber** 4. When a **magnetic field** is generated by impressing a voltage to an

electromagnet 10, the **magnetic field** is
impressed to the liquid crystal film 9, the long axes of liquid crystal molecules are orientated vertically to the bottoms of trapezoidal glasses 6, 7 and light beams made incident from an **optical fiber** 1 are reached to an **optical fiber** 3.

IC ICM G02F001-31
ICS G02F001-133

L23 ANSWER 8 OF 9 JAPIO (C) 2004 JPO on STN
ACCESSION NUMBER: 1985-222779 JAPIO
TITLE: **MAGNETIC FIELD** MEASURING APPARATUS
INVENTOR: MIYAHARA KUNIO; SHIMOKAWA KATSUYUKI
PATENT ASSIGNEE(S): TOSHIBA CORP
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 60222779	A	19851107	Showa	G01R033-032

APPLICATION INFORMATION
STN FORMAT: JP 1984-78343 19840420
ORIGINAL: JP59078343 Showa
PRIORITY APPLN. INFO.: JP 1984-78343 19840420
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1985
AN 1985-222779 JAPIO
AB PURPOSE: To enable the measurement of **magnetic fields** without being affected by changes in the gain of a photoelectric converter by switching two linearly polarized lights with the polarization plane deviated by 90° in a time-sharing manner to be separated into two component orthogonal to each other after irradiating a Faraday rotator.
CONSTITUTION: When a switch circuit 11 drives a light emitting diode 8a alone, the emitted light is irradiated through a Faraday rotator 1 through an **optical fiber** 9a and a polarizer 10a and the polarization plane is rotated. Thereafter, the light is separated into polarized components E<SB>1</SB>X and E<SB>1</SB>Y orthogonal to each other with a photo detector 2 and inputted into an computation circuit 12 through **optical fibers** 12a and 12b, light receivers 3a and 3b and amplifiers 4a and 4b. Then, as timing signals (a) and (b) are switched, a light emitting diode 8b alone is driven and outputs I<SB>2</SB>X and I<SB>2</SB>Y are obtained from a light **source E**<SB>02</SB> deviated by 90° from a light **source E** <SB>01</SB> in the same way. Then, a specified computation is

performed with the computation circuit 13 to obtain a **magnetic field** detection output irrelevant to the intensity of light of a linearly polarized light source and the conversion gain of a photoelectric converter.

IC ICM G01R033-032

L23 ANSWER 9 OF 9 JAPIO (C) 2004 JPO on STN

ACCESSION NUMBER: 1982-161661 JAPIO
TITLE: MEASURING DEVICE BY USE OF **OPTICAL FIBER**
INVENTOR: ONO YUTAKA
PATENT ASSIGNEE(S): ONO YUTAKA
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 57161661	A	19821005	Showa	G01R015-07

APPLICATION INFORMATION
STN FORMAT: JP 1981-48707 19810331
ORIGINAL: JP56048707 Showa
PRIORITY APPLN. INFO.: JP 1981-48707 19810331
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1982

AN 1982-161661 JAPIO

AB PURPOSE: To miniaturize an optical sensor and to enable measurement in a very small range without disturbing an electric or **magnetic field** in a high-voltage region, by using **optical fibers** retaining a polarizing plane in an optical transmission path connecting a measuring part comprising a light generator, a light receiver, etc. to the optical sensor having optical effect elements.
CONSTITUTION: Specific **optical fibers** 19 and 20 retaining polarizing planes are used in an optical transmission path connecting a measuring part comprising a light generator 1, a light receiver, etc. to an optical sensor having electrooptical effect elements 17 and 18. A light emitted from the light generator 1 falls on the **optical fiber** 19 through a condenser 9, and it is transmitted through the **optical fiber** 19 while the linear polarization is maintained therein and falls on the electrooptical effect elements 17 and 18. A light which is modulated by an electric or **magnetic field** in the direction of arrows **E** and **emitted** from the electrooptical effect elements 17 and 18 is made to fall on the polarizing plane retaining axis of the **optical fiber** 20 and transmitted, and it is applied to the light receiver 6 through a focusing lens 10 and transduced into an

```
     electric signal proportional to the intensity of the light. The
     output of this electric signal takes a value proportional to the
     electric or magnetic field impressed on the
     elements 17 and 18.
     COPYRIGHT: (C)1982,JPO&Japio
IC   ICM  G01R015-07
     ICS  G01R033-032


=> file wpids
FILE 'WPIDS' ENTERED AT 22:38:07 ON 05 AUG 2004
COPYRIGHT (C) 2004 THOMSON DERWENT

FILE LAST UPDATED:            5 AUG 2004      <20040805/UP>
MOST RECENT DERWENT UPDATE:      200450         <200450/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE


=> d l36 1-25 max

L36  ANSWER 1 OF 25  WPIDS  COPYRIGHT 2004 THOMSON DERWENT on STN
AN   2004-417802 [39]   WPIDS
DNN  N2004-331443
TI   Magneto-optic switch for optical communication system, has Faraday
     rotator to receive electromagnetic field to
     change polarization of light beam passing through Faraday rotator.
DC   P81 V07 W02
IN   LI, S; SHAO, Q
PA   (LISS-I) LI S; (SHAO-I) SHAO Q
CYC  1
PI   US 2004081392   A1 20040429 (200439)*      11    G02B006-35
ADT  US 2004081392 A1 US 2002-280307 20021025
PRAI US 2002-280307        20021025
IC   ICM  G02B006-35
AB   US2004081392 A UPAB: 20040621
     NOVELTY - A Faraday rotator (125) receives light beam through
     birefringent crystal (115) and half-wave plate pair (120), and an
     electromagnetic field to change the polarization
     of the light beam passing through the Faraday rotator. A mirror
     (140) receives the light beam from the Faraday rotator through a
     prism (135).
          DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included
     for light beam switching method.
          USE - E.g. 1x2, 1x4 and 1x8 optical switch for switching
     modulated or unmodulated light beam between input and output fibers,
     connection/disconnection of transmission paths to route light beams
     modulated with information, add/drop application, pulsing of light
     source e.g. laser, network protection, protection
```

switching, cross connection and tag switching in optical system e.g. **optical fiber** communication system.
ADVANTAGE - Facilitates small size switch without any moving components, with good optical performance, and high switching speed.
DESCRIPTION OF DRAWING(S) - The figure shows the perspective view of the magneto-optic switch.
birefringent crystal 115
half-wave plate pair 120
Faraday rotator 125
prism 135
mirror 140
Dwg.1a/7
FS EPI GMPI
FA AB; GI
MC EPI: V07-G15; V07-K03; W02-C04A9; W02-C04B1

L36 ANSWER 2 OF 25 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2003-748291 [70] WPIDS
DNN N2003-599790 DNC C2003-205185
TI Gate for quantum information processing, has at least two units each having states usable for representing quantum information, and electron system with first and second states that provide different amounts of interaction between units.
DC L03 T01 U21
IN FISHER, A J; GREENLAND, P T; STONEHAM, A M
PA (UNLO) UNIV COLLEGE LONDON
CYC 102
PI WO 2003075220 A2 20030912 (200370)* EN 25 G06N000-00
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
AU 2003248873 A1 20030916 (200430) G06N000-00
ADT WO 2003075220 A2 WO 2003-GB896 20030303; AU 2003248873 A1 AU 2003-248873 20030303
FDT AU 2003248873 A1 Based on WO 2003075220
PRAI GB 2002-5011 20020304
IC ICM G06N000-00
AB WO2003075220 A UPAB: 20031030
NOVELTY - A gate for quantum information processing, comprises at least two units each having states usable for representing quantum information; and an electron system having at least a first state and a second state. The first and second states provide different amounts of interaction between the units. The electron system is

switchable by electromagnetic radiation between the first and second states to control the interaction between the units.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(a) an array of gates for quantum information processing, comprising an application mechanism for applying field(s) over the array;

(b) a method of selectively controlling gates in the array of gates, comprising applying field(s) over the array; and

(c) a method of fabricating the gate, comprising creating a region of silicon low-energy **electron irradiation** of **optical fiber** made of silicon dioxide;
absorbing on that silicon a molecule including two atoms which can function as donors in silicon and which have a specific interatomic spacing in that molecule; and oxidizing the surface to burn off he undesired atoms from the molecule and to oxidize the silicon to silicon dioxide.

The field shifts the energy of transitions used to control the states. Each field varies spatially, so that different portions of the array are selectively controllable.

USE - For quantum information processing, particularly for a quantum computer.

ADVANTAGE - The inventive gate does not need external electrodes to manipulate the interaction between the qubits. It does not need for the control electron system to be of the same character as the qubit (information-representing unit). It enables gate to be singled out by a combination of spatial position and energy.

DESCRIPTION OF DRAWING(S) - The figure is a schematic diagram of a gate.

Dwg.1/4

TECH WO 2003075220 A2UPTX: 20031030

TECHNOLOGY FOCUS - ELECTRONICS - Preferred Component: The information-representing units are systems having nuclear spin or electronic spin, or are reorientable defects. The first state is a ground state of the electron system. The second state is an excited state of the electron system. It has a larger spatial extent than the first state. When the electron system is in the first state the interaction between the units is eliminated and when in the second state the interaction is enhanced. The information-representing units comprise donor atoms, of which the nuclear spin states are usable for representing quantum information; and acceptor atoms, of which the nuclear spins states are usable for representing quantum information. The electron system comprises one or more electrons provided by donor atom(s), and one or more holes resulting from acceptor atom(s) receiving an electron. The donor atom(s) comprises a deep-donor. The acceptor atom comprises a deep-acceptor. The donor or acceptor atom is located between the information-representing units. It is separated from the information-representing units by an interface. The energy difference between the first and second states

is greater than the energy associated with the information of the information-representing units. It is preferably greater than 0.025 eV. The gate is provided in a nanocrystal. The information-representing units are provided in a silicon channel in a silicon dioxide matrix. The electromagnetic radiation is time dependent, preferably a laser pulse. The field comprises one or more of electric **field, magnetic field** or
stress field. The stress field is appliable (sic) externally as an ultrasonic or acoustic pulse. It is the result of misfit dislocations. More than one field is appliable. The directions in which the fields vary spatially are different from each other. One of the fields is time-dependent. The selective control of qubit-qubit interaction or intra-qubit control is enabled. The molecule is a buckyball pair, or a rigid organic molecule.

FS CPI EPI
FA AB; GI
MC CPI: L03-H03A; L04-C02
EPI: T01-E05A; U21-C03B9

L36 ANSWER 3 OF 25 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2003-381432 [36] WPIDS
DNN N2003-304780 DNC C2003-101190
TI Deposition of patterned thin film on fibrous substrate by positioning the substrate in masked position relative to tubular members for shadow masking, and depositing thin film material on portion of surface area of the substrate.
DC A60 F06 L01 L03 M13 P42 T03 U12 U14 V02 V04 V07 X12 X15 X16
IN BENSON, M H; NEUDECKER, B J; BENSON, M; NEUDECKER, B
PA (BENS-I) BENSON M H; (NEUD-I) NEUDECKER B J; (ITNE-N) ITN ENERGY SYSTEMS INC
CYC 101
PI WO 2003022461 A1 20030320 (200336)* EN 62 B05D001-00
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
US 2003059526 A1 20030327 (200336) B05D005-12
ADT WO 2003022461 A1 WO 2002-US28660 20020911; US 2003059526 A1 Provisional US 2001-318320P 20010912, US 2002-109991 20020401
PRAI US 2002-109991 20020401; US 2001-318320P 20010912
IC ICM B05D001-00; B05D005-12
ICS B05D005-10; B05D007-02; B05D007-06; B05D007-14; B05D007-24
AB WO2003022461 A UPAB: 20030609
NOVELTY - A patterned thin film on a fibrous substrate is deposited by positioning the substrate in a masked position relative to

tubular members for shadow masking; and depositing a thin film material on a portion of a surface area of the substrate.

DETAILED DESCRIPTION - Deposition of a patterned thin film on a fibrous substrate includes providing the substrate (160) having a length, a surface area, a cross-section and an axis perpendicular to the cross-section; providing tubular members (120) for shadow masking; positioning the substrate in a masked position relative to the tubular members; and depositing a thin film material on a portion of the surface area of the substrate.

An INDEPENDENT CLAIM is also included for an apparatus for depositing a patterned thin film on the substrate, comprising the tubular members for shadow masking; the fibrous substrate; a positioning mechanism (130) for positioning the substrate; and a thin film material deposited on an area of the substrate.

USE - For depositing a patterned thin film on a fibrous substrate.

ADVANTAGE - The invention produces multilayer thin film functional patterns on fibrous or ribbon-like substrates in a single pass. It deposits thin film functional patterns on the substrates with reduced need for venting deposition chambers to the atmosphere, and without a need for venting deposition of chambers to the atmosphere. It provides a tailorable production of the thin film functional patterns on the substrates.

DESCRIPTION OF DRAWING(S) - The figure is a perspective view diagram of a patterned thin film electrochemical devices.

Tubular members 120

Positioning mechanism 130

Rotating mechanism 140

Substrate 160

Dwg.1/13

TECH WO 2003022461 A1UPTX: 20030609

TECHNOLOGY FOCUS - ELECTRONICS - Preferred Method: The depositing step includes depositing a multi-layer thin film material. The step of providing the substrate includes providing a storing mechanism for storing the substrate. The tubular members are separated by distance that defines the length of the patterned thin film. A step of moving the substrate co-axially is discretely indexed. The indexing step includes storing an index in a computer readable medium. The index is based on the position of a stepper motor. A portion of the substrate is disposed within a deposition chamber. Pressure within the deposition is controlled. The tubular members are attached to the interior surface. The thin film material is patterned according to a functional pattern comprising a multilayer functional pattern. A buffer chamber is disposed between a pair of deposition chambers. The depositing step comprises a deposition technique from sputter plasma, **electron beam** evaporation processing, cathodic arc evaporation, chemical vapor evaporation, chemical vapor deposition, or plasma enhanced chemical

vapor deposition. The patterning step comprises a patterning technique from laser ablation, chemical etching, mechanical etching, or photolithographic film masking.

Preferred Component: The substrate comprises a ribbon-like substrate; copper; Iconel 600 (RTM; metal alloy); an **optical fiber**; or a material from glass, ceramic, sapphire, polymer, metal, metal alloy, carbon, semiconductor, shape memory alloy, and polished naturally occurring fibers. It is rigid, flexible, suitable for use in weaving, deformable, elastic, or windable. It is for thermal insulation, thermal conduction, electrical insulation, electrical conduction, charge storage, **magnetic field** storage, optical transmission, shadowing, data transmission, data storage, provision of structural rigidity, provision of structural flexibility, provision of static structural shape, provision of dynamic structural shape, provision of tensile strength, provision of compressive strength, electromagnetic energy absorption, electromagnetic energy absorption, electromagnetic energy reflection, liquid absorption, liquid transmission, liquid storage, gas absorption, gas transmission, gas storage, fuel absorption, fuel transmission, or fuel storage. The storing mechanism is a spool, a reel, or a drum. The functional pattern comprises a lithium battery configuration, buried lithium battery configuration, lithium-ion battery configuration, buried lithium-ion battery configuration, lithium-free battery configuration, buried lithium-free battery configuration, copper-indium-gallium-arsenide photovoltaic cell configuration, or multilayer interconnect configuration. The apparatus includes pneumatic controls, radio frequency controls or wired controls, and a rotating mechanism (140) for rotating the substrate.

Preferred Material: The thin film material comprises a metal, a metallic alloy, an intermetallic compound, an electronically conducting oxide, a semi-conducting oxide, an electronically conducting nitride, a semi-conducting nitride, an electronically conducting oxynitride, a semi-conducting oxynitride, an electronically conducting carbide, a semi-conducting carbide, electronically conducting partially sp2-hybridized carbon, semi-conducting partially sp2-hybridized carbon, III-V semi-conductor compounds, II-VI semi-conductor compounds, an electronically conducting organic polymeric compound, a semi-conducting organic polymeric compound, an electronically insulating oxide, an electronically insulating nitride, an electronically insulating oxynitride, an electronically insulating carbide, an electronically insulating partially sp3-hybridized carbon, an electronically insulating chalcogenide, an electronically insulating halide, or an electronically insulating organic polymeric compound.

Preferred Properties: The substrate comprises a circular cross-section, an elliptical cross-section, or rectangular

cross-section. The cross-section is dynamic comprising variations along the length of the substrate or variations in time. The diameter of the cross-section is approximately 1-approximately one quarter inch. The substrate has a diameter of approximately 100 micrometer, and a length of 0.083-4 ft (preferably a length greater than 1000 ft).

TECHNOLOGY FOCUS - TEXTILES AND PAPER - Preferred Material: The polished naturally occurring fibers comprise a material from wool, cotton, hemp, or wood.

FS CPI EPI GMPI
FA AB; GI
MC CPI: A11-C04; F03-F33; L01-F03A1; L03-C03; L03-E03; L03-G02; L04-E05D; M13-E; M13-F; M13-G
EPI: T03-A02A; U12-A02A3; U12-B03B; U14-H01F; V02-H02; V04-U15; V07-F01A3A; V07-F01A3C; X12-D02; X12-E04; X15-A02A; X16-A02A; X16-B01F1
PLE UPA 20030609
[1.1] 018; P0000; S9999 S1070-R
[1.2] 018; ND01; Q9999 Q7341 Q7330; Q9999 Q7396 Q7330; Q9999 Q7330-R; Q9999 Q8264-R; K9574 K9483; K9676-R; B9999 B4079 B3930 B3838 B3747; B9999 B4035 B3930 B3838 B3747; Q9999 Q9143; Q9999 Q7374-R Q7330; B9999 B3758-R B3747; Q9999 Q9381 Q7330; B9999 B5447 B5414 B5403 B5276; B9999 B5425 B5414 B5403 B5276; B9999 B5436 B5414 B5403 B5276
[2.1] 018; P0000
[2.2] 018; ND01; Q9999 Q7341 Q7330; Q9999 Q7396 Q7330; Q9999 Q7330-R; Q9999 Q8264-R; K9574 K9483; K9676-R; Q9999 Q7114-R; B9999 B3269 B3190; B9999 B3270 B3190; B9999 B3350 B3190; K9712 K9676; K9518 K9483

L36 ANSWER 4 OF 25 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2003-119629 [11] WPIDS
DNN N2003-095288 DNC C2003-030767
TI Preparation of **optical fiber** involves **irradiating electron beams** to resin composition on **optical fiber** while passing at zone provided with **magnetic field.**
DC A89 L01 P81 V05 V07
IN KAWADA, N; OHBA, T; UENO, M
PA (SHIE) SHINETSU CHEM CO LTD; (SHIE) SHINETSU CHEM IND CO LTD; (KAWA-I) KAWADA N; (OHBA-I) OHBA T; (UENO-I) UENO M
CYC 30
PI US 2002112508 A1 20020822 (200311)* 15 C03C025-62
EP 1236697 A1 20020904 (200311) EN C03C025-12
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
JP 2002249345 A 20020906 (200311) 6 C03C025-10

```
     KR 2002068250    A   20020827 (200311)                 C03C025-62
     JP 2003002697    A   20030108 (200315)          11     C03C025-10
     TW 539655        A   20030701 (200379)                 C03C025-12
     EP 1236697       B1  20040616 (200439)   EN            C03C025-12
         R: DE FR GB
     DE 60200625      E   20040722 (200450)                 C03C025-12
ADT  US 2002112508 A1 US 2002-77975 20020220; EP 1236697 A1 EP
     2002-251134 20020219; JP 2002249345 A JP 2001-43407 20010220; KR
     2002068250 A KR 2001-67113 20011030; JP 2003002697 A JP 2001-189609
     20010622; TW 539655 A TW 2001-132730 20011228; EP 1236697 B1 EP
     2002-251134 20020219; DE 60200625 E DE 2002-00200625 20020219, EP
     2002-251134 20020219
FDT  DE 60200625 E Based on EP 1236697
PRAI JP 2001-189609       20010622; JP 2001-43407        20010220
IC   ICM  C03C025-10; C03C025-12; C03C025-62
     ICS  B01J019-08; B29C035-10; C03C025-24; G02B006-44
```

AB US2002112508 A UPAB: 20030214

NOVELTY - An **optical fiber** is prepared by applying a liquid composition of **electron beam** -curable resin to bare or coated **optical fiber**, **irradiating electron beams** to the resin composition on **optical fiber** for curing while passing the fiber under atmospheric pressure, and providing a **magnetic field** in the zone for improving the efficiency of **electron irradiation.**

USE - For preparing **optical fiber.**

ADVANTAGE - The inventive method complies with the increased drawing speed of the bare **optical fiber** without compromising the transmission properties of the **optical fiber.** The provision of **magnetic field** improves the efficiency of the **electron irradiation.**

Dwg.0/14

TECH US 2002112508 A1UPTX: 20030214

TECHNOLOGY FOCUS - ELECTRONICS - Preferred Method: The electric **field** and **magnetic field** are provided in the zone so that the **electron beams** pass across the electric **field** and **magnetic field** to two-dimensionally converge on the **optical fiber** . The **magnetic field** has a direction parallel to the path of **optical fiber,** and the electric field has a direction perpendicular to the path of the **optical fiber.**

Preferred Parameters: The **magnetic field** has a **magnetic flux** density of at least 0.1 T. The **electron beams** have been accelerated at voltage of 60-160 kV.

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Components: The zone has an inert gas atmosphere, preferably helium.

TECHNOLOGY FOCUS - POLYMERS - Preferred Components: The liquid composition comprises a **polyether urethane acrylate** oligomer and reactive diluent.

FS CPI EPI GMPI
FA AB
MC CPI: A11-B05; A11-C02C; A12-L03A; L01-F03A
EPI: V05-F05A7A; V05-F08D5; V07-F01A1; V07-F01A3A
PLE UPA 20030214
[1.1] 018; P1058-R P1592 P0964 H0260 F34 F77 H0044 H0011 D01; M9999 M2017; M9999 M2824; M9999 M2153-R; M9999 M2813; H0237-R; M9999 M2073; L9999 L2391; L9999 L2073; K9814 K9803 K9790
[1.2] 018; Q9999 Q8344 Q8264; Q9999 Q7114-R; K9530 K9483; K9518 K9483; K9676-R; N9999 N7147 N7034 N7023; ND03; ND07
[1.3] 018; A999 A408

L36 ANSWER 5 OF 25 WPIDS
AN 2002-722802 [78] WPIDS
DNN N2002-569986 DNC C2002-204473
TI **Fiber optic** enhanced scintillator detector for detecting events and **rays, e**.g. gamma **rays**, in downhole and medical applications, includes light-conducting **optical fiber**(s) connected to photon output.
DC H01 K08 S03 S05 U11 V07
IN PANDELISEV, K A
PA (PAND-I) PANDELISEV K A
CYC 1
PI US 2002117625 A1 20020829 (200278)* 21 G01T001-20
ADT US 2002117625 A1 Provisional US 2001-270904P 20010226, US 2001-881104 20010615
PRAI US 2001-270904P 20010226; US 2001-881104 20010615
IC ICM G01T001-20
AB US2002117625 A UPAB: 20021204
NOVELTY - A **fiber optic** enhanced scintillator detector comprises a scintillator (10) for producing photons upon being energized by particles, energy or rays. The scintillator comprises a body (11) with collimators (17, 19) that direct photons toward a photon output; and light-conducting **optical fiber**(s) (21, 23) with proximal end(s) (25, 27) connected to the output for receiving photons.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) a **fiber optic** enhanced scintillator process;

(b) a detector process, comprising providing a scintillation crystal assembly, providing an optical viewing portion for allowing an operator to view the assembly and adjacent objects from a distance, providing a light source at one or both ends of the optical viewing portion, providing sharp images of the objects being viewed, providing observation and shape and size measurements or control functions in the optical viewing portion; and

(c) an inspection process.

USE - For detecting events and **rays, e**.g. gamma **rays,** in downhole and medical applications.

DESCRIPTION OF DRAWING(S) - The figure shows a scintillator with multiple **optical fiber** connections.

Scintillator 10

Body 11

Collimators 17, 19

Optical fibers 21, 23

Proximal ends 25, 27

Truncated conical wall 31

Optical couplers 33, 35

Dwg.1/18

TECH US 2002117625 A1UPTX: 20021204

TECHNOLOGY FOCUS - IMAGING AND COMMUNICATION - Preferred Components: The scintillator detector further includes a photon detector connected to the distal end of each **optical fiber** . The **optical fibers** are long enough to control dark current-related problems. They extend from the scintillator far below the earth's surface to the detector mounted above the earth's surface. The scintillator further includes a first optical coupler (33) between the scintillator body and the photon output, a second photon output, and a second optical coupler (35) connected to the scintillator body remote from the first optical coupler. Each optical coupler further comprises an array of microlenses for directing photons from the scintillator body toward the outputs and the proximal end of each **optical fiber.** An electronic cooler is connected to the detector and is surrounded by an **electromagnetic field** shielding. The scintillator body has a truncated conical wall (31) having first and second radiused ends that are convex, concave or flat; and a square, polygonal, rectangular, oval, or round cross-section. The scintillator comprises a scintillator plate with an elastomer layer on one side optically coupled to the scintillator. A gamma ray window is connected to the elastomer layer for admitting gamma rays into the oscillator plate. The **optical fibers** are arranged in optical bundles or cables. A holder is connected to the scintillator body, and may be flexible or resilient.

TECHNOLOGY FOCUS - POLYMERS - Preferred Materials: The first and second optical couplers are made of elastomeric material.

FS CPI EPI
FA AB; GI
MC CPI: H01-A01; K08-A; K09-B; K09-H
EPI: S03-C01C5; S03-G02B1; S03-G02B3; S05-D02C; U11-C18D;
V07-F01A1B; V07-F01B4A; V07-G10C; V07-G10D; V07-K01

L36 ANSWER 6 OF 25 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2002-343136 [38] WPIDS
CR 2003-259656 [26]; 2003-259657 [26]
DNN N2002-269885
TI Quantum dot photon **source e.**g. for optical cryptography comprises dot layer resonant cavity with Bragg mirrors and **optical fibre** coupling with emitting dot at standing wave anti-node and polarized radiation or applied **magnetic field.**
DC S03 U12 V07 V08 W01
IN HOGG, R A; SHIELDS, A J
PA (TOKE) TOSHIBA RES EURO LTD
CYC 1
PI GB 2367690 A 20020410 (200238)* 59 H01L033-00
GB 2367690 B 20031112 (200375) H01L033-00
ADT GB 2367690 A GB 1999-27690 19991123; GB 2367690 B GB 1999-27690 19991123
PRAI GB 1999-27690 19991123
IC ICM H01L033-00
AB GB 2367690 A UPAB: 20031120
NOVELTY - The resonant cavity comprises two layers (33, 37) and an InAs one-thousand quantum dot (max) layer (35) with an area density less than 3 multiply 107 cm-2 fabricated using e.g. the Stranskii Krastinow grow mode for a 1.3 microns dot transition wavelength. This is enclosed by lower and upper AlAs/GaAs Bragg mirrors (51, 53) to couple the emitted cavity mode wavelengths to an **optical fibre** via an anti-reflection coating (43), the upper mirror being partially reflecting.

DETAILED DESCRIPTION - An electron-hole pair is produced from a supply stream of single or n electrons at predetermined time intervals and illuminated with laser radiation at an appropriate quantum dot optical transition energy so the electron is excited into a conduction band excited state. The excited electrons and/or holes relax to the ground state levels and then emit a single photon as they recombine with the radiation pulse duration less than relaxation time. Either the incident light is circularly polarized with single orientation or an applied **magnetic field** lifts the conduction band spin degeneracy, and the laser spectral line width is tuned smaller than the shift in dot transition energy after the first electron hole pair absorption. The cavity thickness is resonant with a wavelength of the emitting dot placed at a standing wave anti-node.

An INDEPENDENT CLAIM is included for a method of fabricating a photon source.
USE - Optical quantum cryptography e.g. for encryption algorithm security keys or low-noise source for optical imaging, spectroscopy, laser ranging and metrology.
ADVANTAGE - Can emit single or n photons spaced by predetermined constant or varied time intervals as only one electron can be accommodated in a single conduction band level. Coupling efficiency to the **optical fibre** is maximized and shot noise is reduced.
DESCRIPTION OF DRAWING(S) - The drawing shows a single photon emitter within a resonant cavity.
Layers 33, 37
Quantum dot layer 35
Anti-reflection coating 43
Bragg mirrors 51, 53
Dwg.4/22
FS EPI
FA AB; GI
MC EPI: S03-A; U12-A01; V07-G; V08-A; W01-A05A

L36 ANSWER 7 OF 25 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2002-303798 [34] WPIDS
DNC C2002-088281
TI Novel fluorescent molecule useful for real-time monitoring organ function such as glomerular filtration, renal blood flow or hepatic function, has polyaminopolyacetic acid derivative and an electroluminescent group.
DC B04 D16 G04
IN RABITO, C
PA (GEHO) GEN HOSPITAL CORP; (RABI-I) RABITO C
CYC 97
PI WO 2002005858 A2 20020124 (200234)* EN 53 A61K049-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001080647 A 20020130 (200236) A61K049-00
US 6440389 B1 20020827 (200259) A61B010-00
US 2003017111 A1 20030123 (200310) A61K049-00
US 2003215391 A1 20031120 (200377) A61K049-00
JP 2004517041 W 20040610 (200438) 105 A61K049-00
EP 1427451 A2 20040616 (200439) EN A61K049-00
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
ADT WO 2002005858 A2 WO 2001-US22901 20010719; AU 2001080647 A AU

2001-80647 20010719; US 6440389 B1 Provisional US 2000-219362P 20000719, US 2000-631138 20000802; US 2003017111 A1 Provisional US 2000-219362P 20000719, Div ex US 2000-631138 20000802, US 2002-228807 20020826; US 2003215391 A1 WO 2001-US22901 20010719, US 2003-204511 20030506; JP 2004517041 W WO 2001-US22901 20010719, JP 2002-511789 20010719; EP 1427451 A2 EP 2001-959055 20010719, WO 2001-US22901 20010719

FDT AU 2001080647 A Based on WO 2002005858; US 2003017111 A1 Div ex US 6440389; JP 2004517041 W Based on WO 2002005858; EP 1427451 A2 Based on WO 2002005858

PRAI US 2000-631138 20000802; US 2000-219362P 20000719; US 2002-228807 20020826; US 2003-204511 20030506

IC ICM A61B010-00; A61K049-00
ICS C07D257-02; C07F005-00

AB WO 200205858 A UPAB: 20020528
NOVELTY - A molecule (I) comprising a polyaminopolyacetic acid derivative (II), and an electroluminescent group chelated to (II), where the conjugate exhibits fluorescence when irradiated with red or infrared light, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an apparatus (III) for detecting the clearance rate of a substance from extracellular fluid, comprising a light source capable of producing light of sufficient intensity and energy to be absorbed by an electroluminescent group in a subject's extracellular fluid, an **optical fiber** to deliver light from the light source to the subject, a detector, an **optical fiber** to deliver light emitted by the electroluminescent group to the detector, and a processor to calculate the rate of depletion of the electroluminescent group based on values measured by the detector; and

(2) a bicyclic molecule comprising a structure (S1), or a structure (S2).

S = cyclic organic group having at least one atom, selected from oxygen and nitrogen; and

R = an organic functionality.

ACTIVITY - Cytostatic.

No supporting data given.

MECHANISM OF ACTION - None given.

USE - (I) is useful for detecting a clearance function of glomerulus in a subject, by providing (I) in a circulatory system of the subject, irradiating a tissue site with electromagnetic **radiation** (**e**.g. pulsed laser) having sufficient energy and intensity to be absorbed by (I), optionally, waiting until a background emission has decayed to an insignificant level, and detecting the intensity of emission from tissue site, and repeating the detection steps at known time intervals until an elapsed time since the irradiation is 90% of the decay time, where

(I) is not metabolized but only cleared by a single mechanism, does not bind plasma protein or extracellular components and is not reabsorbed, by the subject, before detection. (I) is useful in magnetic resonance imaging, by injecting (I) to the patient, exposing the patient to a **magnetic field** and a radio frequency pulse having an energy corresponding to hydrogen absorbance energy, and detecting emissions from hydrogen ions after removing radio frequency energy. (I) is also useful in immunochemical analysis, by associating (I) with an analyte immobilized on a support, through a first or second ligand, exposing (I) to light at its absorbance wavelength, and detecting the light emitted by (I). A second electroluminescent complex is associated with a second analyte, where the emission wavelength of the second complex is detectably different from the emission wavelength of (I). (I) is associated by removing an electroluminescent agent associated with the analyte, and coordinating the agent with (II) to form (I), where (II) is not attached to the analyte, and the electroluminescent agent is attached to the analyte through a ligand (all claimed). (I) is useful for monitoring organ function such as glomerular filtration, renal blood flow and hepatic function. (I) is useful for treating cancer, and as labels for bioanalytical assays.

ADVANTAGE - The method of real-time monitoring, for especially when conducted with (I), provides a reliable method for real-time monitoring of renal function. The technique may be exploited to monitor metabolic function for other organs as well. It provides a powerful tool for health care providers to quickly identify patients experiencing kidney or other organ failure and apply appropriate remedies.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic of a laser-induced fluorescence instrument.

Dwg.6/10

TECH WO 200205858 A2UPTX: 20020528

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Molecule: The electroluminescent group of (I) comprises a trivalent lanthanide ion selected from Ce3+, Nd3+, Sm3+, Eu3+ and Tb3+, and has a decay time of greater than 50 ns. (II) is selected from diethylenetriaminepentaacetic acid (DTPA), ethylene glycol N,N,N',N'-tetraacetic acid (EGTA) and a polyaminopolybis(2-aminoethyl ether) acetic acid, and comprises a structure S1 or S2. (II) further comprises a solubility enhancer comprising N-acetyl glutamine. In S1, S is characterized by aromatic, aliphatic, substituted and/or unsubstituted members, and comprises furanyl, tetrahydrofuranyl, pyrrolidinyl, furoyl, pyrrolyl or their substituted derivatives. S is optionally substituted with NO2, NH2, isothiocyanato, semicarbazido, thiosemicarbazido, maleimido, bromoacetamido or carboxyl group. R comprises an acetate or p-toluene sulfonyl group. R is a substituted aromatic acid selected from picolinic acid, nicotinic acid and furoic acid.

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Molecule: (I) further comprises an antibody, a DNA or RNA fragment, oligonucleotide, enzyme or an enzyme co-factor attached to (II). (II) is sequestered in a micelle.
Preferred Apparatus: The light source in (III) is a pulsed laser, and the frequency of the laser is such that the laser emits light at a time interval which is a predetermined fraction of a decay time of the electroluminescent group.

```
KW     [1]  0061-33901 CL NEW; 0061-33902 CL NEW; 103568-0-0-0 CL;
       93978-0-0-0 CL; 184587-0-0-0 CL; 93605-0-0-0 CL; 105730-0-0-0 CL;
       184610-0-0-0 CL; 184598-0-0-0 CL
FS     CPI
FA     AB; GI; DCN
MC     CPI: B04-B03C; B04-E01; B04-G01; B04-L01; B07-D13; B07-F03;
            B11-C07B4; B12-K04; D05-H09; G04-A
DRN    0268-U
CMC    UPB   20020528
       M1   *06* M430 M782 M905
                 DCN: RA00C8-K; RA00C8-M
       M1   *07* M430 M782 M905
                 DCN: RA00NS-K; RA00NS-M
       M1   *08* M430 M782 M905
                 DCN: RA012P-K; RA012P-M
       M1   *09* M430 M782 M905
                 DCN: RA013I-K; RA013I-M
       M1   *10* M430 M782 M905
                 DCN: RA00GC-K; RA00GC-M
       M2   *01* F013 F016 F750 H1   H183 H2   H203 M280 M320 M413 M510 M521
                 M530 M540 M710 M904 M905
                 RIN: 44303
                 DCN: 0061-33901-N
       M2   *02* F011 F014 F016 F590 H1   H183 H2   H203 M280 M320 M413 M510
                 M521 M530 M540 M710 M904 M905
                 RIN: 00494
                 DCN: 0061-33902-N
       M2   *03* H1   H103 H183 J0   J014 J1   J173 M280 M311 M312 M322 M323
                 M332 M342 M349 M381 M383 M392 M393 M416 M430 M620 M782 M904
                 M905 M910
                 DCN: R00268-K; R00268-M; R07027-K; R07027-M
       M2   *04* H1   H103 H182 H5   H582 H8   J0   J014 J1   J173 M280 M311
                 M312 M323 M332 M342 M349 M381 M383 M393 M416 M430 M620 M782
                 M904 M905
                 DCN: R04439-K; R04439-M; R09157-K; R09157-M
       M6   *05* M430 M905 R515 R528 R530 R533 R536 R614 R623 R639
```

L36 ANSWER 8 OF 25 WPIDS
AN 2001-417925 [44] WPIDS

DNN N2001-309664
TI **Fiber optic** temperature sensor, has spherical micro-particle that is set resonating by laser diode, so that resonance wavelength can be related to temperature by calibration, the sensor being insensitive to **e.m. radiation.**
DC S03 V07
IN JANETTA, F; SCHWEIGER, G
PA (RUBI-N) RUBITEC GES INNOVATION & TECHNOLOGIE RUH; (JANE-I) JANETTA F; (SCHW-I) SCHWEIGER G
CYC 6
PI WO 2001044768 A1 20010621 (200144)* GE 12 G01K011-32
RW: EA
W: CA JP KR US
DE 19960370 A1 20010705 (200146) G01K011-00
DE 19960370 C2 20011122 (200172) G01K011-00
US 2003118075 A1 20030626 (200343) G01K011-26
ADT WO 2001044768 A1 WO 2000-EP12466 20001209; DE 19960370 A1 DE 1999-1060370 19991214; DE 19960370 C2 DE 1999-1060370 19991214; US 2003118075 A1 WO 2000-EP12466 20001209, US 2002-149801 20021001
PRAI DE 1999-19960370 19991214
IC ICM G01K011-00; G01K011-26; G01K011-32
ICS G01K011-12
AB WO 200144768 A UPAB: 20010809
NOVELTY - Temperature sensor comprises an optical resonator connected to one or more optical waveguides (2,7). The optical resonator comprises a preferably spherical micro-particle (4) which is coupled to the narrowed ends (3, 6) of the waveguides so that light from a laser diode (1) is coupled to the micro-particle on one side, while the other side of it is coupled to an optical spectrometer (8).

DETAILED DESCRIPTION - INDPEPENDENT CLAIMS are made for use of the micro-resonator for measuring material strain or as an approach sensor.

USE - The micro-particle resonates depending on its diameter. The latter is temperature dependent so the sensor can be calibrated so that resonance wavelength is related to temperature.

ADVANTAGE - Existing temperature gauges such as thermocouples or thermistors produce an electrical output that is subject to electrical interference and so may not be reliable in the presence of large **electromagnetic fields.** As the invention sensor is optical it overcomes this drawback. Existing **optical fiber** temperature gauges have very large measurement surfaces, and are not always suitable.

DESCRIPTION OF DRAWING(S) - Figure shows a schematic view of the invention.
micro particle 4
laser diode 1
optical waveguides 2, 7

```
        narrowed waveguide ends 3, 6
        optical spectrometer. 8
     Dwg.1/2
FS   EPI
FA   AB; GI
MC   EPI: S03-B01G; V07-N

L36  ANSWER 9 OF 25  WPIDS  COPYRIGHT 2004 THOMSON DERWENT on STN
AN   2000-039133 [03]   WPIDS
DNN  N2000-029467       DNC C2000-010194
TI   Surface treatment method for yarns of industrial fabrics.
DC   A14 A35 A87 F02 F06 L03 V07
IN   DECKER, W; ELLWANGER, R E; JOHNSON, C B; MIKHAEL, M G; O'BRIEN, T D;
     SHIPLEY, G; YIALIZIS, A
PA   (ASTE-N) ASTEN INC
CYC  86
PI   WO 9958757      A1 19991118 (200003)* EN   41    D06M010-02
        RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC
            MW NL OA PT SD SE SL SZ UG ZW
         W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES
            FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK
            LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG
            SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW
     AU 9938929      A  19991129 (200018)             D06M010-02
     US 6287687      B1 20010911 (200154)             B32B007-02
ADT  WO 9958757 A1 WO 1999-US10149 19990508; AU 9938929 A AU 1999-38929
     19990508; US 6287687 B1 Provisional US 1998-84769P 19980508, US
     1999-307077 19990507
FDT  AU 9938929 A Based on WO 9958757
PRAI US 1998-84769P        19980508; US 1999-307077        19990507
IC   ICM  B32B007-02; D06M010-02
AB   WO    9958757 A UPAB: 20000118
```

NOVELTY - The yarn is introduced into a treating chamber. A plasma generated in a plasma chamber by a hollow electrode is focussed to the treatment chamber by an **electromagnetic field** generator, to react the plasma with selected yarn surface. The plasma treated yarn is coated with a compound which is cured subsequently.

USE - For surface treatment of yarns such as monofilaments, multifilaments, used in manufacture of industrial fabrics and **optical fibers.**

ADVANTAGE - The yarn is treated in an efficient and accurate manner and the fabric can be used to work under conditions of high mechanical stress, hostile environments as the yarns are surface treated selectively. The surface properties such as hydrophilicity, hydrophobicity, oleophilicity, oleophobicity, conductivity, chemical resistance, abrasion resistance of the fabric are optimized in a single component.

DESCRIPTION OF DRAWING(S) - The figure shows an arrangement for treating a yarn in plasma treatment apparatus.
Plasma treatment apparatus 2
Strand 3
Coating applicator 60
Curing unit 70
Guide roller 88
Dwg.4/12

TECH WO 9958757 A1 UPTX: 20000118
TECHNOLOGY FOCUS - ELECTRONICS - Preferred Apparatus: The plasma generator is a hollow cathode.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Materials: The coating applied to the plasma treated yarn is an acrylate which is cured by UV radiation or by an **electron beam radiation.**
Preferred Method: The coating is applied by vapor deposition.

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Materials: The coating is a metal or ceramic condensate.

FS CPI EPI
FA AB; GI
MC CPI: A11-B05; A11-C04E; A11-C05C; A12-L03A; A12-S05T; F03-C; F03-E; F03-E01; L03-G02; L03-H04D
EPI: V07-F01A3A; V07-F01A3B; V07-K
PLE UPA 20000118
[1.1] 018; P0000; S9999 S1070-R; S9999 S1218 S1070; M9999 M2802; K9427; L9999 L2802
[1.2] 018; ND03; ND07; Q9999 Q9132; Q9999 Q7885-R; Q9999 Q8344 Q8264
[1.3] 018; N9999 N7090 N7034 N7023; N9999 N7147 N7034 N7023; B9999 B5447 B5414 B5403 B5276; N9999 N7136 N7034 N7023; B9999 B5436 B5414 B5403 B5276
[2.1] 018; G0260-R G0022 D01 D12 D10 D26 D51 D53; H0000; H0011-R; M9999 M2073; L9999 L2073; L9999 L2391; K9869 K9847 K9790; K9814 K9803 K9790; P0088
[2.2] 018; ND03; ND07; Q9999 Q9132; Q9999 Q7885-R; Q9999 Q8344 Q8264
[2.3] 018; B9999 B5447 B5414 B5403 B5276; Q9999 Q7114-R; B9999 B3383-R B3372; B9999 B3485-R B3372; B9999 B5287 B5276; B9999 B4580 B4568; B9999 B3269 B3190

L36 ANSWER 10 OF 25 WPIDS
AN 1997-479830 [44] WPIDS
CR 1997-448838 [41]; 1997-448839 [41]; 1997-448840 [41]; 1997-448841 [41]; 2000-386469 [29]; 2002-040120 [66]
DNN N1997-400280 DNC C1997-152315
TI Light extractor used with light guide - comprises discontinuous

phase in polymeric matrix having refractive indices that are matched and mismatched along orthogonal axes.

DC A89 P81 Q71 V07
IN ALLEN, R C; FREIER, D G; KOTZ, A L; NEVITT, T J
PA (MINN) MINNESOTA MINING & MFG CO
CYC 75
PI WO 9732230 A1 19970904 (199744)* EN 103 G02B006-12
RW: AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG UZ VN YU
AU 9719804 A 19970916 (199803)
EP 883826 A1 19981216 (199903) EN
R: DE FR GB IT NL
BR 9707763 A 19990727 (199941)
CN 1212764 A 19990331 (200005)
JP 2000506993 W 20000606 (200035) 100 G02B005-30
MX 9806938 A1 19990101 (200051) G02B006-12
KR 99087310 A 19991227 (200059) G02B006-12
EP 883826 B1 20020109 (200211) EN G02B006-12
R: DE FR GB IT NL
DE 69709546 E 20020214 (200220) G02B006-12
ADT WO 9732230 A1 WO 1997-US3130 19970228; AU 9719804 A AU 1997-19804 19970228; EP 883826 A1 EP 1997-907932 19970228, WO 1997-US3130 19970228; BR 9707763 A BR 1997-7763 19970228, WO 1997-US3130 19970228; CN 1212764 A CN 1997-192655 19970228; JP 2000506993 W JP 1997-531138 19970228, WO 1997-US3130 19970228; MX 9806938 A1 MX 1998-6938 19980826; KR 99087310 A WO 1997-US3130 19970228, KR 1998-706718 19980827; EP 883826 B1 EP 1997-907932 19970228, WO 1997-US3130 19970228; DE 69709546 E DE 1997-609546 19970228, EP 1997-907932 19970228, WO 1997-US3130 19970228
FDT AU 9719804 A Based on WO 9732230; EP 883826 A1 Based on WO 9732230; BR 9707763 A Based on WO 9732230; JP 2000506993 W Based on WO 9732230; KR 99087310 A Based on WO 9732230; EP 883826 B1 Based on WO 9732230; DE 69709546 E Based on EP 883826, Based on WO 9732230
PRAI US 1996-610092 19960229
REP EP 488544; US 2604817; US 4717225; US 5202938; US 5217794; US 5222795
IC ICM G02B005-30; G02B006-12
ICS F21V008-00; G02B006-00
AB WO 9732230 A UPAB: 20020402

A light extractor, used in combination with a light guide, comprises: (a) a polymeric first phase; and (b) a second phase, which is disposed within the first phase and discontinuous along at least 2 of any 3 mutually perpendicular axes. The refractive indices of the 2 phases differ along a first axis by more than 0.05, and

along a second axis orthogonal to the first axis by less than 0.05.

Also claimed is an optical device comprising a light source, a light guide and a light extractor as above on the light guide.

USE - Used as light extractors in various optical devices, including light guides such as the Large Core **Optical Fibre**. In remote-**source** lighting applications, **e**.g. architectural highlighting, decorative and medical lighting, signs, visual guidance, e.g. on landing strips or in aisles of aircraft or theatres, instrument displays, especially those requiring IR filters to prevent heating, exhibit, roadway and vehicle lighting, downlighting, and task, accent and ambient lighting. Also for making optical films used, e.g. as low-loss (non-absorbing) reflective polarisers, for which polarisation directions of non-transmitted light are reflected diffusely, optical bodies that act as a reflective polariser with a high extinction ratio, films that show a flat transmission curve as a function of light wavelength, which minimises colour changes, films that extract all of the light injected into a light fibre system as desired polarisation direction, and as total internal reflection cladding for **optical fibres**.

ADVANTAGE - The refractive index mismatch can be conveniently and permanently manipulated to achieve desired degrees of diffuse and specular reflection and transmission. The optical material is stable to stress, strain, temperature differences and electric and **magnetic fields**, and it has an insignificant level of iridescence. Transmission and reflection properties can be controlled by changing the thickness of an optical body. Scattering behaviour can be controlled by varying the size and shape of the disperse phase and its alignment. Co-continuous systems as above are frequently easier to process and may impart properties such as weatherability, reduced flammability, greater impact resistance and tensile strength, improved flexibility and superior chemical resistance. Interpenetrating polymer networks (IPN) are particularly useful in certain applications as they swell but do not dissolve in solvents and they show suppressed creep and flow c.f. analogous non-IPN systems.

Dwg.0/9

FS CPI EPI GMPI

FA AB

MC CPI: A09-A02; A12-L03; A12-L03D
EPI: V07-F01A5; V07-G10C; V07-K02; V07-K04

PLE UPA 20020123
[1.1] 018; H0293; H0317; P1989 P1978 P0839 H0293 D01 D10 D11 D18 D20 D32 D50 D63 D93 D78 E00 E22 F41 F90; S9999 S1285-R
[1.2] 018; H0022 H0011; G1025-R G0997 D01 F28 F26 D11 D10 D50; R01023 G1343 G1310 G4024 D01 D19 D18 D31 D50 D60 D76 D88 F37 F35 E00 E20; H0293; H0317; P1978-R P0839 D01 D50 D63 F41; S9999 S1285-R; L9999 L2528 L2506; L9999 L2186-R

[1.3]	018; H0022 H0011; G1025-R G0997 D01 F28 F26 D11 D10 D50; R01489 G1343 G1310 G4024 D01 D20 D18 D32 D50 D60 D78 D92 F37 F35 E00 E22; H0293; H0317; P1978-R P0839 D01 D50 D63 F41; S9999 S1285-R; L9999 L2528 L2506; L9999 L2186-R
[1.4]	018; H0022 H0011; G1025-R G0997 D01 F28 F26 D11 D10 D50; R00702 G1343 G1310 G4024 D01 D19 D18 D31 D50 D60 D76 D88 F37 F35 E00 E21; H0293; H0317; P1978-R P0839 D01 D50 D63 F41; S9999 S1285-R; L9999 L2528 L2506; L9999 L2186-R
[1.5]	018; H0022 H0011; G1025-R G0997 D01 F28 F26 D11 D10 D50; G1467 G1456 G1445 G4024 D01 D63 F41 F90 E00 E20 D11 D10 D19 D18 D31 D76 D50 D90; H0293; H0317; P1978-R P0839 D01 D50 D63 F41; S9999 S1285-R; L9999 L2528 L2506; L9999 L2197 L2186
[1.6]	018; H0022 H0011; G1025-R G0997 D01 F28 F26 D11 D10 D50; R01002 G1456 G1445 G4024 D01 D11 D10 D19 D18 D31 D50 D63 D76 D90 F41 F90 E00 E21; H0293; H0317; P1978-R P0839 D01 D50 D63 F41; S9999 S1285-R; L9999 L2528 L2506; L9999 L2197 L2186
[1.7]	018; G1025-R G0997 D01 F28 F26 D11 D10 D50; R01023 G1343 G1310 G4024 D01 D19 D18 D31 D50 D60 D76 D88 F37 F35 E00 E20; R01489 G1343 G1310 G4024 D01 D20 D18 D32 D50 D60 D78 D92 F37 F35 E00 E22; R00702 G1343 G1310 G4024 D01 D19 D18 D31 D50 D60 D76 D88 F37 F35 E00 E21; G1467 G1456 G1445 G4024 D01 D63 F41 F90 E00 E20 D11 D10 D19 D18 D31 D76 D50 D90; R01002 G1456 G1445 G4024 D01 D11 D10 D19 D18 D31 D50 D63 D76 D90 F41 F90 E00 E21; H0293; H0317; P1978-R P0839 D01 D50 D63 F41; S9999 S1285-R; L9999 L2528 L2506; L9999 L2186-R; L9999 L2197 L2186; H0033 H0011
[1.8]	018; R00479 G0384 G0339 G0260 G0022 D01 D11 D10 D12 D26 D51 D53 D58 D63 D85 F41 F89; H0000; S9999 S1285-R; P0088; P0113
[1.9]	018; ND01; K9416; K9483-R; K9676-R; K9712 K9676; K9778 K9745; K9381; B9999 B4444 B4240; B9999 B4320 B4240; B9999 B5152-R B4740; B9999 B5174 B5152 B4740; Q9999 Q8355 Q8264; Q9999 Q8344 Q8264; Q9999 Q8311 Q8264; Q9999 Q8026 Q7987; Q9999 Q7283; Q9999 Q7023 Q6995; Q9999 Q6837 Q6826; Q9999 Q9223 Q9212; Q9999 Q9234 Q9212; B9999 B3758-R B3747; B9999 B3178; B9999 B4400-R B4240; B9999 B4728 B4568; B9999 B4239; B9999 B4171 B4091 B3838 B3747; B9999 B4159 B4091 B3838 B3747; B9999 B4035 B3930 B3838 B3747; B9999 B4580 B4568; B9999 B3872 B3838 B3747; N9999 N5936 N5914; N9999 N5970-R; K9767 K9756 K9745
[1.10]	018; A999 A113
[2.1]	018; G0102-R G0022 D01 D12 D10 D18 D51 D53; R00708 G0102 G0022 D01 D02 D12 D10 D19 D18 D31 D51 D53 D58 D76 D88; H0000; H0011-R; S9999 S1285-R; P1741; P1752
[2.2]	018; ND01; K9416; K9483-R; K9676-R; K9712 K9676; K9778 K9745; K9381; B9999 B4444 B4240; B9999 B4320 B4240; B9999

B5152-R B4740; B9999 B5174 B5152 B4740; Q9999 Q8355 Q8264; Q9999 Q8344 Q8264; Q9999 Q8311 Q8264; Q9999 Q8026 Q7987; Q9999 Q7283; Q9999 Q7023 Q6995; Q9999 Q6837 Q6826; Q9999 Q9223 Q9212; Q9999 Q9234 Q9212; B9999 B3758-R B3747; B9999 B3178; B9999 B4400-R B4240; B9999 B4728 B4568; B9999 B4239; B9999 B4171 B4091 B3838 B3747; B9999 B4159 B4091 B3838 B3747; B9999 B4035 B3930 B3838 B3747; B9999 B4580 B4568; B9999 B3872 B3838 B3747; N9999 N5936 N5914; N9999 N5970-R; K9767 K9756 K9745

[2.3] 018; B9999 B4966 B4944 B4922 B4740

[2.4] 018; B9999 B4966 B4944 B4922 B4740

[3.1] 018; R00708 G0102 G0022 D01 D02 D12 D10 D19 D18 D31 D51 D53 D58 D76 D88; R00800 G0384 G0339 G0260 G0022 D01 D11 D10 D12 D23 D22 D26 D31 D42 D51 D53 D58 D63 D73 D87 F47 F41 F89; H0022 H0011; P0464-R D01 D22 D42 F47; A999 A113; A999 A782; P1741; P0088

L36 ANSWER 11 OF 25 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1996-489017 [49] WPIDS
DNN N1996-411967 DNC C1996-153143
TI Spin detector for observing **magnetic field** distribution on surface of ferromagnetic substance - has deg. measurement device which measures deg. of circular polarisation of light emitted from observed element.
DC K08 L03 S01 S03 U11
PA (HITA) HITACHI LTD
CYC 1
PI JP 08248141 A 19960927 (199649)* 6 G01T001-32
ADT JP 08248141 A JP 1995-55421 19950315
PRAI JP 1995-55421 19950315
IC ICM G01T001-32
ICS G01R033-12
AB JP 08248141 A UPAB: 19961205
The spin detector consists of a P type GaAs single crystal film (11) whose thickness is about 1 micrometer, an **optical fibre** bundle (12) and a degree measurement device (13) of circle polarisation. The degree measurement device consists of an optical filter (14), a quarter wavelength board (15), a straight line polarising plate (16) and an intensity measurement device (17). The single crystal film is irradiated by a spin polarised **electron beam** (18) from an observed element and a Cs-O multilayer film is formed on the single crystal film by incidence side of the polarised **electron beam** and thus a negative electron affinity (NEA) is created. A slow down potential is applied on the single crystal film so that the energy of the polarised **electron beam** during projection is set to zero. The degree measurement device measures the degree of circular polarisation of light emitted from the observed element.

ADVANTAGE - Accelerates **electron beam** at high speed. Provides compact structure. Eases coordination of optical axis.
Dwg.1/5

FS CPI EPI
FA AB; GI
MC CPI: K08-X; L04-A02A; L04-E
EPI: S01-E02; S03-G02C1A; U11-F01A9

L36 ANSWER 12 OF 25 WPIDS
AN 1996-046568 [05] WPIDS
DNN N1996-039062
TI **Electromagnetic field** sensor appts. for e.g. measuring interference EM **radiation** from **e**.g. drastic event in automatic motor vehicle - provides electrically connective layer on substrate between electrodes of optical modulator which has predetermined resistance.
DC S01 T07
PA (NITE) NIPPON TELEGRAPH & TELEPHONE CORP
CYC 1
PI JP 07311234 A 19951128 (199605)* 5 G01R029-08
ADT JP 07311234 A JP 1993-16325 19930203
PRAI JP 1993-16325 19930203
IC ICM G01R029-08
AB JP 07311234 A UPAB: 19960205
The electric field sensor appts. includes an optical modulator formed on a substrate (4) having electro-optic effect. The optical modulator has a light wave guide inserted in the gap between a set of electrodes (6) of the optical modulator. The unmodulated light signal is transmitted to the optical modulator from a light source using an **optical fibre.**

The light signal is modulated by the voltage passed in the gap between the electrodes due to electromagnetic induction. A modulated light signal transmitted through the **optical fibre** is detected by a light detector. An electrically conducting layer (15) having predetermined resistance connects the two electrodes of the optical modulator.

ADVANTAGE - Measures electric field accurately with high stability, where sensitivity varies minimally with ambient temperature.
Dwg.2/9

FS EPI
FA AB; GI
MC EPI: S01-D07B; T07-A01; T07-C03A

L36 ANSWER 13 OF 25 WPIDS
AN 1995-353231 [46] WPIDS
DNN N1995-263404

TI Electromagnet spectrometer with **optical fibre** analyser - has vacuum chamber with **electromagnet** generating homogeneous **field** and coupled to casing housing extremities of **optical fibre** bundles through which light generated by Cherenkov effect propagates to sweeping camera.
DC S03 S05 V05
IN VILLATE, D
PA (COMS) COMMISSARIAT ENERGIE ATOMIQUE
CYC 1
PI FR 2718533 A1 19951013 (199546)* 25 G01T001-29
ADT FR 2718533 A1 FR 1994-4188 19940408
PRAI FR 1994-4188 19940408
IC ICM G01T001-29
ICS G01T001-22
ICA H01J049-44; H05H007-00
AB FR 2718533 A UPAB: 19951122
The spectrometer includes a vacuum chamber (6), made of a non-magnetic material, and an electromagnet (8), which generates a homogeneous **magnetic field** inside the chamber.
An **electron beam** (2), generated by an accelerator (4), is transmitted via a sealed tube (16) to the vacuum chamber. The chamber output is coupled to a casing (18) which houses the extremities of two bundles of **optical fibres** (10,12).

A Hall sensor is provided for checking the homogeneity of the **magnetic field** inside the chamber. When **electrons hit** the extremities of the **optical fibres** sparks are generated by Cherenkov effect. The light propagates along the fibres to a slit sweeping camera (14) coupled to the fibres.

USE/ADVANTAGE - In electron accelerators, in medicine or industry, for measuring electron velocities. Has optimised light collection. Is accurate and has better resolution. Enables analysis of energy variation with time.
Dwg.2/5
FS EPI
FA AB; GI
MC EPI: S03-G02B1; S03-G02C1; S05-D02C; V05-J01A5; V05-J01G; V05-J01J; V05-M04B

L36 ANSWER 14 OF 25 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1995-081081 [11] WPIDS
CR 1995-240160 [31]; 1995-240161 [31]
DNN N1995-064179
TI **Field** augmented permanent **magnet** structures - has shall of magnetic material with hollow cavity and access port that passes through shell and communicates with cavity.

```
DC   V02 V07 X12
IN   LEUPOLD, H A; TILAK, A
PA   (USSA) US SEC OF ARMY
CYC  1
PI   US 5382936      A  19950117 (199511)*      10    H01F007-02
ADT  US 5382936 A CIP of US 1992-892093 19920602, US 1992-996281 19921223
PRAI US 1992-996281        19921223; US 1992-892093        19920602
IC   ICM  H01F007-02
AB   US    5382936 A UPAB: 19950818
     The structure includes a spherical shall of permanent magnet
     material forming a hollow spherical concentric cavity in which the
     shell produces a magnetic field with a set
     magnitude and direction aligned with a polar axis of the shell. The
     structure has an access port that passes through the shell along the
     polar axis and communicating with the cavity.
          The structure also incorporates a a spherical field enhancing
     insert permanently magnetised in set direction located in the cavity
     adjacent to and concentric with the inner surface of the shell. The
     insert has a tunnel communicating with the access port and is
     situated in the cavity without obstructing the access port
     communicating with the cavity.
          USE/ADVANTAGE - In high intensity compact permanent magnets in
     fibre optic or electron beam
     applications. Increased magnetic intensity without increasing size
     and mass.
     Dwg.3/6
FS   EPI
FA   AB; GI
MC   EPI: V02-E01; V07-K03; X12-C06

L36  ANSWER 15 OF 25  WPIDS  COPYRIGHT 2004 THOMSON DERWENT on STN
AN   1994-210210 [26]    WPIDS
DNN  N1994-165555        DNC C1994-096099
TI   Radiation induced light wavelength shifter - comprises columnar
     scintillator attached to fluorescent optical fibre
     in light shielding casing.
DC   K07 P81 S03 X14
IN   ATSUMI, Y; SAKUMA, K; TAKEBE, M; TERADA, H; URAYAMA, K; WAKAHARA, M
PA   (MITO) MITSUBISHI JUKOGYO KK; (TOEL) TOHOKU ELECTRIC POWER CO
CYC  6
PI   EP 604947       A1 19940706 (199426)* EN   23     G01T005-08
         R: DE FR GB SE
     JP 06201835     A  19940722 (199434)       11     G01T001-20
     US 5434415      A  19950718 (199534)       19     G01T001-20
     EP 604947       B1 19970528 (199726)  EN   22     G01T005-08
         R: DE FR GB SE
     DE 69311084     E  19970703 (199732)              G01T005-08
     JP 2002341041   A  20021127 (200308)       11     G01T001-20
```

ADT EP 604947 A1 EP 1993-120957 19931227; JP 06201835 A JP 1992-349553 19921228; US 5434415 A US 1993-174701 19931228; EP 604947 B1 EP 1993-120957 19931227; DE 69311084 E DE 1993-611084 19931227, EP 1993-120957 19931227; JP 2002341041 A Div ex JP 1992-349553 19921228, JP 2002-104290 19921228
FDT DE 69311084 E Based on EP 604947
PRAI JP 1992-349553 19921228; JP 2002-104290 19921228
REP US 3344276; US 4788436; US 4829185; US 4931646
IC ICM G01T001-20; G01T005-08
ICS G01T001-203; G02B006-00; H04B010-00
AB EP 604947 A UPAB: 19941021
A radiation induced light wavelength shifter (20) comprises a columnar scintillator (22), a fluorescent **optical fibre** (23) axially inserted into the scintillator and extending out of the scintillator and a light shielding casing covering the scintillator (22) and the fluorescent **optical fibre** (23).

USE/ADVANTAGE - The apparatus is used to detect radiation such as alpha, beta or rays, neutron rays or X-**rays, e**.g. in a nuclear power plant or a radiological facility. The apparatus is compact and light weight and is capable of shifting wavelengths and performing optical transmission free of influence from **electromagnetic fields** and induction mor efficiently and without a dedicated power supply.
Dwg.1/14
ABEQ US 5434415 A UPAB: 19950904
Radiation induced light wavelength shifter (20) comprises columnar scintillator (22) and fluorescent **optical fibre** (23) which is coaxially inserted into scintillator (22). Fibre (23) extends out of the scintillator. Light shielding member covers the scintillator and fibre (23). A light reflecting material surrounds the scintillator (22) within the light shielding member.

USE - Radiation induced light wavelength shifter for use in nuclear power plants and radiological facilities that deal with radiation and radiative substances. It is capable of shifting wavelengths and performing optical transmission free of influence of **electromagnetic fields,** induction noise and the like with efficiency and without a dedicated power supply. Can be used for doing radiation measurements in the vicinity of a top portion of a nuclear fuel assembly laid in a water pool of a nuclear power plant. Signals can be transmitted in a wavelength band with a low transmission loss. The wavelength shifter can be easily mfd. Radiation measurements which have been difficult with the prior art under electromagnetic environment or in water can be carried out with ease.
Dwg.1/14
ABEQ EP 604947 B UPAB: 19970626
A radiation induced light wavelength shifter (20) for shifting the

wavelength of light induced by radiation, comprising a columnar scintillator (22) and a fluorescent **optical fibre** (23), characterised in that the fluorescent **optical fibre** (23) is axially inserted with one end into the scintillator such that the scintillator surrounds this end of the fluorescent **optical fibre,** which extends with its other end out of the scintillator and emits light upon receiving light from the scintillator; and a light shielding member (24, 21) covers the scintillator (22) and a fluorescent **optical fibre** (23).
Dwg.1/14

FS CPI EPI GMPI
FA AB; GI
MC CPI: K08-A
EPI: S03-G01A; S03-G02B1; X14-C05X

L36 ANSWER 16 OF 25 WPIDS
AN 1992-382141 [46] WPIDS
DNN N1992-291347 DNC C1992-169609
TI Emission enhanced sputtering magnetron appts. - includes **electron emission** enhancement device to centre uniform shield for sputtering of targets with wide variety of shapes.
DC M13 V05 X25
IN MARSHALL, J
PA (SURF-N) SURFACE SOLUTIONS INC
CYC 27
PI WO 9218663 A1 19921029 (199246)* EN 44 C23C014-34
RW: AT BE CH DE DK ES FR GB GR IT LU MC NL SE
W: AT AU BR CA CH CS DE DK ES FI GB HU JP KR LU NL NO PL RU SE
AU 9217970 A 19921117 (199310) C23C014-34
EP 581902 A1 19940209 (199406) EN C23C014-34
R: AT BE CH DE DK ES FR GB GR IT LI LU MC NL SE
US 5298137 A 19940329 (199412) 19 C23C014-34
JP 06508001 W 19940908 (199440) 14 H01L021-203
BR 9205911 A 19941227 (199508) C23C014-34
AU 664995 B 19951214 (199606) C23C014-34
ADT WO 9218663 A1 WO 1992-US3133 19920416; AU 9217970 A AU 1992-17970 19920416, WO 1992-US3133 19920416; EP 581902 A1 EP 1992-917278 19920416, WO 1992-US3133 19920416; US 5298137 A Cont of US 1991-688914 19910419, US 1992-955250 19921001; JP 06508001 W JP 1992-510301 19920416, WO 1992-US3133 19920416; BR 9205911 A BR 1992-5911 19920416, WO 1992-US3133 19920416; AU 664995 B AU 1992-17970 19920416
FDT AU 9217970 A Based on WO 9218663; EP 581902 A1 Based on WO 9218663; JP 06508001 W Based on WO 9218663; BR 9205911 A Based on WO 9218663; AU 664995 B Previous Publ. AU 9217970, Based on WO 9218663
PRAI US 1991-688914 19910419

REP 1.Jnl.Ref; US 4376625; US 4407713; US 4756810; US 4824544; US 4885070; US 5069770
IC ICM C23C014-34; H01L021-203
ICS C23C014-35
AB WO 9218663 A UPAB: 19931006
Appts. comprises (a) an elongated cathode, pref. hollow, terminating in first and second end sections; (b) a target material surrounding said cathode and in electrical contact therewith forming a sputtering device, pref. made entirely of said cathode material; (c) **electron emission** enhancing means electrically connected to said first end section, pref. including a coaxial hollow cathode which encircles said first end section; and (d) means for applying an electric current through said cathode for generating a circumferential **magnetic field** around it, comprising a low voltage DC current source having its negative and positive terminals connected to said first and second end sections respectively.

USE/ADVANTAGE - Achieves a uniform sputtering rate over a target with a wide variety of shapes while maintaining a uniform plasma sheath over the entire length of even an irregularly shaped target.
0/10

ABEQ US 5298137 A UPAB: 19940510
Sputtering appts., to form a thin film, has a target material surrounding an elongate cathode (54) with two end sections and an **electron emission** enhancer (34) radially spaced around one section with its surface facing the cathode to create electron saturation at the sputtering surface of the target material adjacent to the enhancer. Current is applied through the cathode to generate a **magnetic field** with force vectors directed circumferentially around the cathode and target material.

The enhancer pref. has a coaxial hollow cathode mounted to the first cathode end and electrically connected to it, and the current is from a low-voltage d.c. **magnetic field** source.

USE/ADVANTAGE - For coating semiconductor devices, glass, computer screens, steel, sunglasses, automobile parts, surgical implants, jewellery, tool bits, sheet plastic, fabrics or **fibre optics**. Provides a uniform sputtering rate along the length of the target and a uniform thin film coating on a workpiece.
Dwg.1/10

FS CPI EPI
FA AB; GI
MC CPI: M13-G02
EPI: V05-F04B5C; V05-F04B9; V05-F04D; V05-F05C3A; V05-F05E3; V05-F08D1A; X25-A04

L36 ANSWER 17 OF 25 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1992-380417 [46] WPIDS
DNN N1992-290018
TI Device for optical phase control of phased aerial array radiating elements - has magnetic system with tunable **magnetic field fibre optic** guides coupled to bragg cell.
DC W02
IN EVTIKHIEV, N N; GALKIN, O L; KLIMOV, A A
PA (MORA-R) MOSC RADIO ELTRN AUTOM INST
CYC 1
PI SU 1704201 A1 19920107 (199246)* 4 H01Q003-26
ADT SU 1704201 A1 SU 1989-4723977 19890726
PRAI SU 1989-4723977 19890726
IC ICM H01Q003-26
AB SU 1704201 A UPAB: 19931006
Controller contains coherent optical **radiation source** (1), **e.**g. semiconductor laser, a system for the formation of the signal and ref. optical beams (2) made of a dividing cube with mirrors. The system also contains Bragg cell (5) and a magnetic system with tunable **magnetic field** (6), high frequency generator (7), a selection of **optical fibres** (8), photo-detectors (9), radio tracts (10), radiating elements (11) and high frequency magnetic film (12). The coherent light applied forms signal and ref. beams. The signal beam is fed to the Bragg cell where diffraction occurs resulting in the change of direction of propagation. Thus scanning by the signal beam can be achieved at a given frequency of generator (7).
USE/ADVANTAGE - Microwave radio engineering. Has simple construction and ensures radiation frequency re-tuning effected by the use of magnetic system with tunable **magnetic field.** Bul.1/7.1.92.
1/2
FS EPI
FA AB; GI
MC EPI: W02-B06B

L36 ANSWER 18 OF 25 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1991-302876 [41] WPIDS
DNN N1991-232098
TI Optical shutter using magneto-optical material - has C-shaped magnetic head with open ends facing outer surface of shutter, polarised light source and magnetic fluid.
DC P81 S01 V07
IN OHARA, T
PA (EAST) EASTMAN KODAK CO
CYC 1
PI US 5050968 A 19910924 (199141)*

ADT US 5050968 A US 1990-488176 19900305
PRAI JP 1989-246733 19890922
IC G01R033-03; G02B005-30; G02F001-09
AB US 5050968 A UPAB: 19930928
The shutter has a magneto-optical material confined in a holding plate which allows a light to pass through the material. When the intensity of a **magnetic field** applied to the magneto-optical material is changed, an amount of a polarised light passing through the material is adjusted. A C-shaped magnetic head with a coil has open ends which are disposed to face the outer surface of a shutter member. A number of optical shutters are arranged to form an optical shutter array.
Disposed opposite to one surface of the optical shutter body are two light sources (2) for illuminating the magnetic fluid in the body. Various illuminating elements can be used as the light **sources, e.**g. fluorescent lamps, laser sources, LEDs, **optical fibres,** halogen lamps, xenon lamps and mercury arc lamps. Positioned between the light sources and parallel to the reflection-type optical shutter body (1) is a lens (3) for focussing the light reflected by the body to its focal point.
ADVANTAGE - **Magnetic field** can be accurately and efficiently applied even to fluid confined in extremely small area.
2c/7
FS EPI GMPI
FA AB; GI
MC EPI: S01-E01; V07-G15; V07-K01; V07-K03

L36 ANSWER 19 OF 25 WPIDS
AN 1991-194411 [27] WPIDS
DNN N1991-148846
TI Air pressure measuring device for aeroplane - has infrared energy **source e.**g. laser diode with driver feeding converter e.g. solar cell and storage capacitor.
DC Q25 S02 S03 W05 W06
IN HINRICHS, H
PA (DEAI-N) DEUT AIRBUS GMBH
CYC 1
PI DE 4013921 C 19910704 (199127)*
ADT DE 4013921 C DE 1990-4013921 19900430
PRAI DE 1990-4013921 19900430
IC B64D045-00; G01L009-00; G01L019-00; G08C023-00
AB DE 4013921 C UPAB: 19930928
The air manometer has a piezo-electric sensor (6) which is towed by a connecting **fibre optic** cable (3,5). Sensor signals are frequency modulated (7), pulsed by a transmitter (8) and fed by a cable (3,5) to the receiver (9) for demodulation and

presentation by a processor (4).
An infra-red energy source (10) eg a power led or laser diode with driver (11) feeds converter (12) which can be a solar cell and storage capacitor (13) for energization of the complete manometer (1) via cable (3,5).
USE/ADVANTAGE - Enables reliable measurements of external air pressure with minimum volume of equipment and storage space. Lightweight build of remote manometer sensor imposes only small tensile stress in cable during flight. Is largely unaffected by **magnetic fields** or lightning strokes.
1/1

FS EPI GMPI
FA AB
MC EPI: S02-F04E; S03-D; W05-D04; W06-B01B

L36 ANSWER 20 OF 25 WPIDS
AN 1990-123687 [16] WPIDS
DNN N1990-095886
TI **Fibre-optic magnetic field** gradiometer - has several layers of magnetostrictive glass, wrapped with **optical fibre** and immersed in **magnetic field** to null out material differences.
DC S01 S02 S03 V07 W07
IN REMPT, R D
PA (BOEI) BOEING CO
CYC 1
PI US 4906929 A 19900306 (199016)*
ADT US 4906929 A US 1989-325830 19890320
PRAI US 1987-22681 19870306; US 1988-169802 19880318; US 1989-325830 19890320
IC G01B009-02; G01R033-02
AB US 4906929 A UPAB: 19930928
The **fibre-optic magnetic field** gradiometer uses several magnetic transducers to simultaneously determine multicomponents of the gradient and field strength of an external **magnetic field** so as to permit accurate determn. of the location of a ferromagnetic object located in an array of objects. The magnetic transducers are made of several layers of magnetostrictive glass which are wrapped with an **optical fibre** and immersed in an applied **magnetic field** to null out material differences and the earth's **magnetic field.** The null conditions for each adjacent pair are accomplished without disturbing the null conditions of the other adjacent pair. The nulling technique may be accomplished in real time and does not require cutting off the drive signals to adjacent coils.
Thus the nulling may be accomplished simultaneously for all coils as the balancing of each coil is independent of its

neighbours. A **magnetic field** to be detected along the axes of the magnetic transducers causes an optical path length change in the fibres. By using eight magnetic transducers, all gradients and fields may be determined at the same time. Further by employing additional transducers, for a total of thirteen, the second derivatives of the fields may also be determined.

USE/ADVANTAGE - Identification and location of tactical and strategic **targets**, **e**.g. trucks, mines and submarines. Accurate, small, lightweight.

11/15

FS EPI
FA AB; GI
MC EPI: S01-E01; S02-A03A; S02-K03B; S03-A09; V07-K03; V07-N; W07-X

L36 ANSWER 21 OF 25 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1989-116687 [16] WPIDS
DNN N1989-088992
TI Optical system for incremental measurement of displacement - uses analyser and separator to sense steps in polarisation of light caused by **magnetic field.**
DC P81 Q21 S02 V07
IN TARDY, A
PA (COGE) CIE GEN ELECTRICITE SA
CYC 1
PI FR 2619909 A 19890303 (198916)* 16
ADT FR 2619909 A FR 1987-11987 19870827
PRAI FR 1987-11987 19870827
IC B61L025-02; G01C022-00; G01D005-26; G02B006-14
AB FR 2619909 A UPAB: 19930923

A monomode **optical fibre** (F) is positioned along a track along which an object such as a vehicle travels. A laser diode (**E**) **emits** a linearly polorised optical wave which travels along the fibre. The wave is injected through a quarter-wave plate (LQ) to obtain a circular polarisation. A receiver (R) at the remote end of the fibre contains a coupling lens and an analyser cube containing a separator for the polarisation.

Photodiodes sense the two components of the polarisation at the separator output. Two amplifiers apply these signals to a comparator which drives a step detector and counter. A probe (S) on the vehicle creates a **magnetic field** which modifies the luminaces signal depending on the state of polarisation. The step detector senses the changes to indicate vehicle position.

ADVANTAGE - Operates over large distance.

2/3

FS EPI GMPI
FA AB; GI
MC EPI: S02-B09; S02-H; S02-K03B; V07-K; V07-K03

```
L36  ANSWER 22 OF 25  WPIDS  COPYRIGHT 2004 THOMSON DERWENT on STN
AN   1983-765111 [37]   WPIDS
DNN  N1983-164381
TI   Chart recording using fibre-optic tube -
     produces electron beam which is simultaneously
     deflected both horizontally and vertically and records signal in two
     fields.
DC   S02 T04
IN   SATO, H
PA   (DAII-N) DAIICHI ELECTRIC CO LTD
CYC  1
PI   US 4401995      A  19830830 (198337)*      9
PRAI JP 1980-6768       19800125
IC   G01D009-00
AB   US    4401995 A UPAB: 19930925
     The system employs a horizontal sweeper and a vertical scanner using
     a horizontal deflection yoke and a vertical deflection yoke on the
     fibre optics tube.  The fibre
     optics tube also adjusts for the vertical drift of the
     electron beam in the tube caused by the
     environmental magnetic fields, geomagnetism,
     heat drift of electrodes and/or the like.
          The tube records a data signal wave on a record medium such as
     a photo sensitive paper, thermally sensitive paper or the like. The
     photo sensitive paper is driven by a pulse motor.  The recording is
     such that one line in one scanning connects to the next line in the
     next scanning so that all lines are connected.
     1/11
FS   EPI
FA   AB
MC   EPI: S02-K05; T04-G04

L36  ANSWER 23 OF 25  WPIDS  COPYRIGHT 2004 THOMSON DERWENT on STN
AN   1981-H1562D [31]   WPIDS
TI   Magnetic head field dispersion electronic
     monitor - has orthogonal coils and duration-to-amplitude converter
     giving wide measuring range.
DC   T03
IN   KHALETSKII, M B; TEKIN, V V
PA   (RAUE-I) RAU E I
CYC  1
PI   SU 769611       B  19801007 (198131)*
PRAI SU 1978-2703497    19781228
IC   G11B005-46
AB   SU    769611 B UPAB: 19930915
     Probe is suitable for monitoring magnetic heads. It has a wide
     dynamic range by use of supplementary mutually orthogonal coils,
```

electronic converter of duration to amplitude and an outer sawtooth current generator.

Electron beam (1) focussed by the formation system (3) is split by coils (2) either along line Z or along line and frame X-Y. The **electron beam** having passed the field area, which is created by magnetic head (4), passes to the luminescent end (6) of the flexible **optical fibre** from the opposite end (7), at which the light is fixed by the photoelectronic multiplier (9) and after processing in the electronic converter (10), the data signal passes to input of tube (11).

With the line and frame scans, the **electron beam** deflects under the action of the dispersed **magnetic field** through a distance so that the interruption of optical signal takes place. Having extracted (by detection) the envelope of high frequency pulses, the signal diagram of the distribution of the dispersion field can be obtained.
Bul.37/7.10.80

FS EPI
FA AB
MC EPI: T03-A04

L36 ANSWER 24 OF 25 WPIDS
AN 1978-B3038A [06] WPIDS
TI Magnifying image intensifier with several focussing coils - has **fibre optic** windows at ends of vacuum tube with phosphorescent system.
DC V05
IN FLETCHER, J C; VINE, J
PA (USAS) NAT AERO & SPACE ADMIN
CYC 1
PI US 4070574 A 19780124 (197806)*
PRAI US 1976-680958 19760428
IC H01J031-50; H01J039-12
AB US 4070574 A UPAB: 19930901
A magnifying image intensifier has a photocathode responsive to ligth radiation for **emitting** an **electron beam.** There are phosphorescent systems axially spaced from the photocathode forattracting the the **electron beam.**

A first coil surrounds the photocathode and has an electrical current flowing therethrough in one direction. The first coil includes a **magnetic** focussing **field** having a positive **magnetic field** strength at the photocathode. A second coil surrounds substantially all of the space between the photocathode and phosphorescent system. The electrical current flows therethrough opposite to the first direction. The second coils provide a **magnetic** focussing

field reversed from the **magnetic** focussing
field of the first coil between the photocathode and the
phosphorescent system. They provide a negative **magnetic**
field strength at the phosphorescent means for increasing
the usable magnification range of the image intensifier tube without
increasing the power consumption of the first and second coil means.
FS EPI
FA AB

L36 ANSWER 25 OF 25 WPIDS
AN 1977-D0361Y [15] WPIDS
TI Optical scanning and display appts. - has **fibre**
optic light guides associated with corresponding radiation
detectors.
DC W02 W03 W04
PA (INTT) INT STANDARD ELECTRIC CORP
CYC 1
PI GB 1470105 A 19770414 (197715)*
PRAI GB 1974-33982 19740801
IC H04N003-10; H04N005-33
AB GB 1470105 A UPAB: 19930901
The display apparatus has one or more light sources (22) whose
outputs are modulated by signals derived by scanning a field of
view. An electron tube (17) has an envelope transparent in two or
more places with a photocathode (24) associated with one of those
places.

Light is guided from the source(s) onto the photocathode to
produce electrons which are collinated by means of a
magnetic field to direct them onto a luminescent
screen (29) associated with another of the transparent places in the
envelope. The **electron beam** is scanned across
the screen in accordance with the original scanning of the field of
view.
FS EPI
FA AB